



REGIONAL ENTITY TRUSTEES MEETING

OCTOBER 27, 2014

SPP Corporate Center

Little Rock, Arkansas

A G E N D A

8:00 a.m. – 3:00 p.m.

(Lunch 12:00-1:00)

- 1. Call to Order/Introductions John Meyer
- 2. Antitrust Guidelines Emily Pennel
- 3. Approval of Meeting Minutes – July 29, 2014 John Meyer
- 4. Winter Reliability Assessment Overview..... Lanny Nickell
- 5. Critical Infrastructure Protection Committee Update.....Robert McClanahan
- 6. CIP V5 Transition Update Kevin Perry
- 7. Misoperations White Paper..... Doug Bowman
- 8. 2014 Stakeholder Satisfaction Survey ResultsRon Ciesiel
- 9. Summary of Recent System Events Alan Wahlstrom
- 10. 2015 Implementation PlanRon Ciesiel
- 11. Enforcement Report.....Joe Gertsch
- 12. Financial DiscussionRon Ciesiel
- 13. SPP RE 2014 Trustee Self-Assessment..... John Meyer
- 14. General Manager’s Report/Compliance Report.....Ron Ciesiel
- 15. Year-to-Date Financial Statement.....Debbie Currie
- 16. Staff Goals and MetricsRon Ciesiel
- 17. Outreach ActivityEmily Pennel
- 18. NERC COMMITTEE REPORTS – Comments or Questions
 - 18a. Planning CommitteeNoman Williams
 - 18b. Compliance and Certification CommitteeJennifer Flandermeyer
 - 18c. System Protection and Control Lynn Schroeder
 - 18d. Interchange SubcommitteeJason Smith
 - 18e. Operating Committee Report..... Jim Useldinger



19. New Action Items Emily Pennel

20. Future Meetings John Meyer

- January 26, 2015 - Dallas
- April 27, 2015 - Tulsa
- July 27, 2015 - Kansas City
- October 26, 2015 - Little Rock

SPP Regional Entity Antitrust Guidelines

It is SPP RE's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or which might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.



Southwest Power Pool

REGIONAL ENTITY TRUSTEES MEETING

July 28, 2014

Embassy Suites Omaha-Downtown/Old Market

Omaha, Nebraska

A G E N D A

8:00 a.m. – 12:00 p.m.

- 1. Call to Order/Introductions John Meyer
- 2. Antitrust Guidelines Emily Pennel
- 3. Approval of Meeting Minutes – June 17, 2014 John Meyer

John Meyer called the meeting to order at 8:00 a.m. and welcomed Mike Rison with the MRO Board, SPP Board members Larry Altenbaumer and Phyllis Bernard, and NERC’s Mike Moon.

- 4. Long Term Reliability Assessment Lanny Nickell

The LTRA is a ten year outlook for 2015-2024 that assesses reliability and makes recommendations for needed mitigations. The assessment showed a modest annual load growth of 1.5%. We are forecasting an average annual growth of 3.5% in energy efficiency and demand response programs through 2024. Over 3 GW of nameplate capacity of is expected to be retired in this time frame, primarily coal. We do not expect this to cause reliability issues due to the ~7 GW that is expected to come into service, which is primarily wind and natural gas.

There are 65,500 MWs Existing Certain Capacity in 2015. To continue to be above the reserve margin we must have the anticipated generation installed. There is concern about proposed environmental regulations. We expect reserve margins to be adequate but to decrease to ~14.5% in 2024. SPP members are required to maintain a 12% capacity margin, which translates to a 13.6% reserve margin. SPP has formed the Capacity Margin Task Force to improve the SPP capacity margin construct. We are taking nominations now. Every SPP member may nominate one task force member.

We do a capacity adequacy study that is a four-year outlook. Current studies indicate there will be adequate time to the perform generator retrofits necessary to comply with known environmental regulations.

We expect 3,500 miles of 100+ kV transmission over the 10-year assessment period. There is particular emphasis on the western part of the grid due to the influx of renewable generation and localized load growth.

We created the Gas Electric Coordination Task Force in January 2013 to oversee activities between the gas and electric industries in the SPP region. A weather operational plan was created for communication between major gas suppliers and SPP Operations.

We are currently managing reliability concerns regarding the exchange of energy between MISO Central/North and MISO South. Other long term reliability issues include potential coal delivery delays, drought and flooding conditions, and operational issues due to higher wind output.

The Trustees unanimously agreed to accept the draft LTRA for submission to NERC.

*Relationship-Based • Member-Driven • Independence Through Diversity
Evolutionary vs. Revolutionary • Reliability & Economics Inseparable*

5. 2Q Events Report and Facility Ratings Alert Update..... Alan Wahlstrom

We have had 16 system events through 2Q 2014. Eight of the events were analyzed via NERC's event analysis process. There was one Category 1h event (loss of monitoring or control at a control center) and two Category 1f events (unplanned evacuation from a control center facility). NERC has published several lessons learned that we encourage stakeholders to read:

- a. *High AC Voltage Can Lead to Remote Terminal Unit (RTU) Failures*
- b. *Circuit Breaker Modification Leads to Inadvertent Trips*
- c. *Improved Contractor Oversight Needed*
- d. *Generation Relaying – Underfrequency Protection Coordination*
- e. *Loss of SCADA Due to Memory Resources Being Fully Utilized*
- f. *Generation Relaying – Overexcitation*
- g. *Verify That Actions Called for in Operating Guides Can Be Implemented Within Required Time Frames*

On the Facility Ratings Alert, remediation is complete for 100% of the High priority lines, 68% of the Medium priority, and 66% of the Low priority lines. Ron Ciesiel thanks everyone for their participation in the FAC program.

6. Discussion: Extending Trustee Meeting Length in 2015.....Ron Ciesiel

In the last few years, the SPP RE Trustees meetings have grown in both attendance and breadth of topics covered. The Trustees meetings typically do not cover multiple action items; instead, they are primarily opportunities for staff, stakeholders, and Trustees to discuss important reliability matters. The Trustees and a few stakeholders said that it would be a good idea to extend the meeting length until 2:00 or 3:00 p.m. Action items and the most important topics would be put first on the agenda. The Trustees agreed to begin extending the meeting times in October 2013.

7. NERC Operating Committee Report..... Jim Usledinger

The Operating Reliability Subcommittee endorsed the SERC and MISO reliability plans. The Wisconsin and Michigan state regulatory commissions have opened proceedings related to the proposed Local Balancing Authority split identified in the MISO plan. The Balancing Authority ACE Limit Field Trial has been going on since 2005; it was recommended that the field trial continue until BAL-001-2 becomes effective. The Reliability Subcommittee drafted *Reliability Guideline: Generating Unit Operations during Complete Loss of Communications* to provide a strategy for power plant operations in the case of complete loss of communications (both data and voice) between the on-site generating unit operator and the System Operator. The OC approved the guideline and asked the Resource Subcommittee to consider several comments addressing additional areas related to reactive power schedules, transmission system reliability, and regional operating criteria.

The EMS Working group reports to the Events Analysis subcommittee. The group's scope is to analyze events that affect monitoring, control, and situational awareness of the BES and communicate with industry on lessons learned. More 1h events being reported now and 2b events are trending lower. The second annual Monitoring and Situational Awareness Conference is Sept. 23-24 at PJM.

A new joint task force (PC & OC) was created in response to a recommendation from NERC's LTRA to develop a primer on essential reliability services. The task force is developing a tutorial that identifies each essential reliability service and discusses the importance of those services to the operational requirements needed to ensure reliability. The goal is to educate and inform industry leadership, regulators, and policy-makers and develop an approach for tracking and trending.

8. State of Reliability Report..... Mike Hughes

This is the third annual State of Reliability report. The report reviews reliability performance, identifies risks and trends, and provides input to standards projects. The report found that transmission circuit availability was over 97% and transmission transformer availability over 98%. The Daily Severity Risk Index (SRI) has been stable to improving from 2008 to 2013. On average, SRI was approximately as good as 2008 performance, which is the best year on record. Frequency response is trending above the recommended interconnection frequency response obligation; BAL-003-1 will help with this.

The report found that protection system misoperations cause transmission events. There were 71 events related to transmission; over half of those were related to misoperations. Substation equipment failures also impact transmission event severity. Looking continent-wide, NERC found there were issues with 345 kV SF6 puffer-type breakers failing. This was a success story in identifying the root cause of some events.

Seven Energy Emergency Alert (EEA) Level 3 events were declared in 2013, which is less than in prior years. Only one of the EEA 3 events required firm load shed to preserve BES reliability.

Ron Ciesiel encouraged each company to look at this report, which includes a lot of important information and trends.

9. CIP Update..... Kevin Perry

The first round of CIP Version 5 balloting concluded on July 16; all passed but CIP-003-6 and CIP-010-2. Regarding Low Impact BES Cyber Systems, commenters raised concerns that there is an implied requirement to inventory the Low Impact BES Cyber Systems to demonstrate compliance, that identification and monitoring of Physical Access Points is burdensome, “external routable protocol path” needs clarification, and a significantly longer implementation schedule is warranted. It was suggested that NERC combine requirements for Low- and Medium/High-Impact BES Cyber Systems with similar requirements.

Commenters stated that removal of the Identify, Assess, and Correct language reintroduces zero tolerance, irrespective of the enforcement discretion included in the Reliability Assurance Initiative. Other concerns were that the proposed CIP RSAWs introduce new obligations exceeding the CIP requirements, are excessively burdensome, and are inconsistent.

NERC is finalizing the updated CIP Transition guidance; it is expected to be released in August. It will allow entities to assert compliance with V5 requirements during the V3 enforcement period for “mostly compatible” requirements. Any new Critical Cyber Assets resulting from adoption of V5 Impact Rating Criteria will not be subject to V3 compliance expectations.

On July 17 FERC issued a Notice of Proposed Rulemaking (NOPR) on CIP-014, proposing to approve the standard with modifications to allow governmental authorities (i.e., FERC and any other appropriate federal or provincial authorities) to add or subtract facilities from an applicable entity’s list of critical facilities and to remove the term “widespread” in the phrase “widespread instability.” FERC is accepting comments on the NOPR.

10. Enforcement Report.....Joe Gertsch

So far this year we have issued 42 Notices of Possible Violations (NPV). The majority of violations are going through the Find, Fix, and Track process. The active caseload is 171 open violations; 63 are Ops & Planning, 108 are CIP, and 21 are High Impact. The RAI Compliance Exception Process will allow us to process issues outside the enforcement track. We hope this process will be in place in September. Compliance will have the ability to identify compliance exceptions and no NPV will be issued.

Ron Ciesiel noted that incoming violations are continuing to decline, which is good news. The percentage of self-identified violations is increasing. It's important that when we identify violations, mitigation activities occur quickly. This is where we can implement the compliance exception program, ultimately allowing companies to log their own issues.

11. General Manager's & Compliance ReportRon Ciesiel

The BESNet tool is open for submitting Self-Determinations and Exception Requests. If your organization is registered as an RC, PA, TO, TOP, or BA, you must have at least one BESnet Entity Administrator even if you do not expect to submit Notifications or Requests. Exception Requests submitted between 7/1/14 and 9/1/14 will be considered for Compliance purposes as received on 7/1/14. SPP RE has processed 11 requests to date; activity has been modest across the ERO.

There were no reportable vegetation contacts in SPP RE footprint in 2Q 2014; this is the fifth consecutive quarter with no reportable contacts.

The goal of the RAI project is to close the gap between the "one-size-fits-all" program of today to a more risk-informed, customized program. With the wrap-up of the RAI pilot programs, the RAI Steering Team is in the process of developing two final reports on Inherent Risk Assessment and Internal Controls Review (ICR). The ICR will be a formal program for REs to assess Registered Entities' internal control programs. SPP RE has been implementing an enhanced IRA practice for its audit activities for approximately one year and will make the adjustments, if needed, in the final NERC IRA instructions.

NERC is finalizing a transition guidance document for use by the REs and Registered Entities that includes instructions on how to deal with issues surrounding the now defunct Version 4, oversight activities for small entities, and other issues. The expected publication date is mid-August 2014.

12. Outreach Activity Emily Pennel

SPP RE will host the fall workshop Sept. 30 and Oct. 1 in Oklahoma City, followed by the RTO Compliance Forum. Four new videos were posted to the online video training library.

13. Year-to-Date Financial Statement.....Debbie Currie

We are underrunning the budget by \$1.2 million and are projected to underrun for the rest of year. We have three open positions that we are holding in reserve for RAI activities. We gave up one FTE equivalent for the next budget cycle. We are only collecting 80-85 cents on the dollar from entities due to the budget underruns.

14. Staff Goals and MetricsRon Ciesiel

We are on track with staff goals and metrics except 2, 5, 7.

15. NERC Committee Representative Written Reports - Comments or Questions

15a. Planning CommitteeNoman Williams

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Evolutionary vs. Revolutionary • Reliability & Economics Inseparable*



- 15b. Compliance and Certification CommitteeJennifer Flandermeyer
- 15c. Critical Infrastructure Protection CommitteeRobert McClanahan
- 15d. System Protection and Control Lynn Schroeder

16. New Action Items Emily Pennel

- Invite the SPCWG to the October meeting to discuss the misoperations white paper
- Begin the longer meeting format in October 2014

17. Future Meetings John Meyer

Chairman Meyer adjourned the meeting at 12:15 p.m.

- October 28, 2014 - Little Rock
- January 26, 2015 - Dallas
- April 27, 2015 - Tulsa
- July 27, 2015 - Kansas City
- October 26, 2015 - Little Rock

REGIONAL ENTITY TRUSTEE MEETING

July 28, 2014

ATTENDANCE LIST

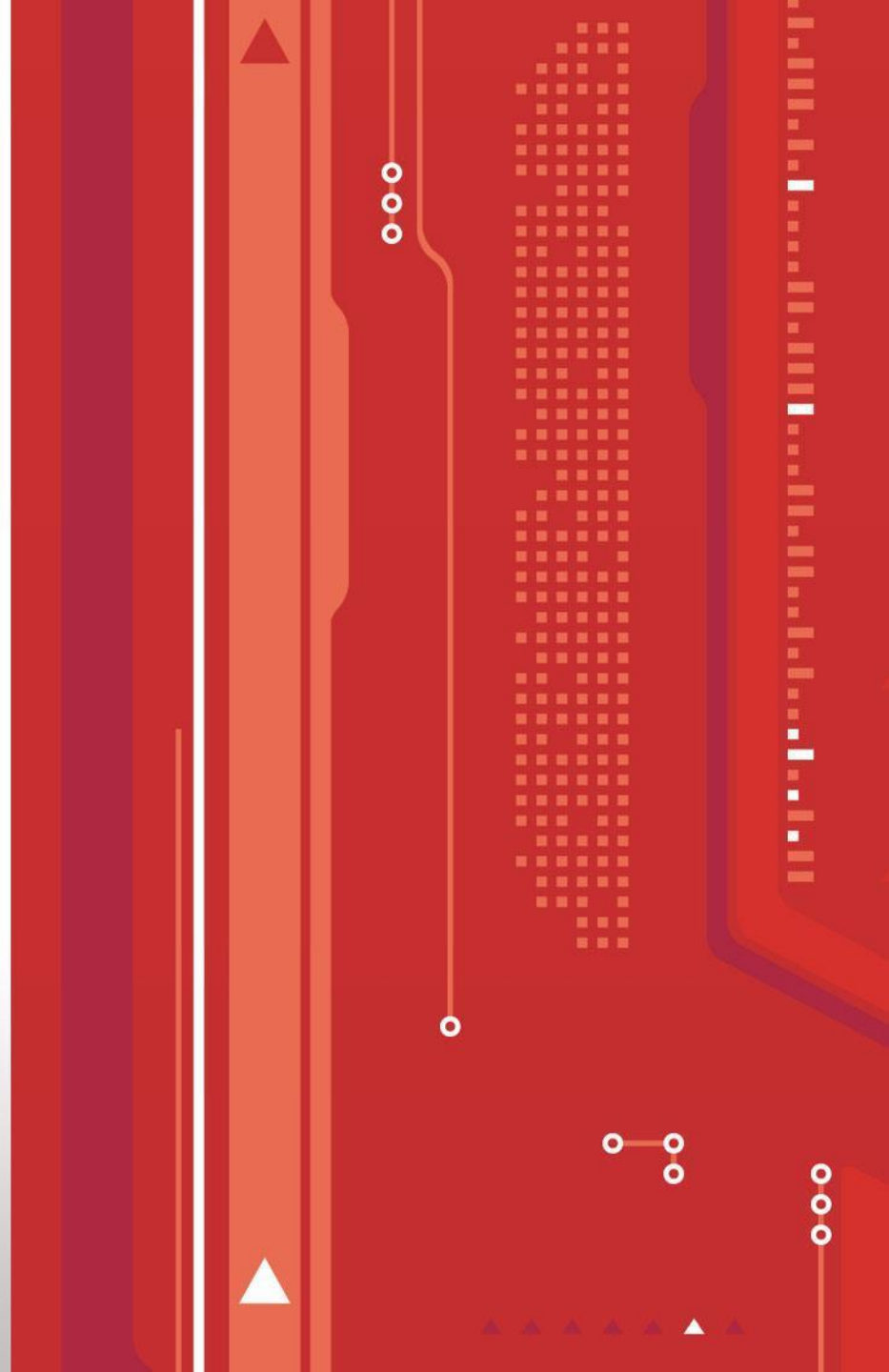
NAME	ORGANIZATION
Sheila Scott	SPP RE
Emily Pennel	SPP RE
Sevan Perry	SPP RE
Alan Wahlstrom	SPP RE
Debbie Currie	SPP RE
Joe Gertsch	SPP RE
TOM HESTERMAN	Sunflower Electric
Stacy DuBois	SPP
Denise Buckingham	KCP&L
Joe Lang	Lincoln Electric System
MIKE MOON	NERC
Jim Jacoby	AEP
LARRY ALLENBACH	SPP Board Director
Mike Risan	BEPC
Noman Williams	Sunflower
Thad Neri	Xcel Energy
Bo Jones	Westar Energy
Tiffany Lake	Westar Energy
Bill HARRELSON	Golden Spread
RON CRESIEL	SPP RE

Mahmood Safi	Omaha Public Power Dist.
John Rhee	OG&E
Jennifer Flandermeyer	KCP&L
Mike Hughes	SPP RE
Terri Pyle (teleconference)	OG&E
Jim Useldinger (teleconf)	KCP&L
Jeff Knottel (teleconf)	City Utilities of Springfield
Kim Van Brimer (teleconf)	SPP
Bryan Kauffman (teleconf)	Xcel Energy
Chris Haley (teleconf)	SPP
Robert Pickle (teleconf)	
Noumvi Ghomsi (teleconf)	Missouri Public Utilities
Jason Chaplin (teleconf)	
Geoffrey Rush (teleconf)	
John Allen (teleconf)	City Utilities of Springfield
Heather Starnes (tele)	HHS Services
Phyllis Bernard	SPP BOB
John Meyer	SPP RE Trustee
Dave Christiano	SPP RE Trustee
Henry Burrows	SPP RE Trustee

2014/2015 Winter Assessment

October 28th, 2014

Chris Haley
chaley@spp.org
501.614.3583



Assessment Staff

- **Chris Haley, Engineer Associate III (RTO)**
- **Derek Hawkins, Sr. Engineer (RTO)**
- **Will Tootle, Supervisor, Operational Planning (RTO)**
- **Alan Wahlstrom, Lead Engineer (SPP RE)**

Winter Reliability Assessment

- **Projected seasonal outlook for winter 2014/2015**
 - Focus on Reporting Area Peak (January)
- **Primary objectives:**
 - Identify areas of concern
 - Make recommendations for mitigations/actions as needed
- **Provides high-level overview of winter reliability assessment for SPP RTO region**
 - Demand growth
 - Capacity adequacy
 - Operational reliability

Assessment Area

- **SPP Planning Authority Reporting Footprint**
 - **Nebraska still registered with Midwest Reliability Organization (Regional Entity)**
 - **SPP RTO operational and planning area includes Nebraska**

Assessment Process

- Created with a combination of projected data/information submitted by SPP Reporting Entities and SPP historical actuals
- SPP staff validate and cross-check data to verify consistency
- SPP staff aggregate information into one dataset for entire assessment area
- SPP staff use peer review process to validate data and develop reliability assessments
- Assessment then undergoes peer-review process at NERC prior to finalization

2014/2015 Winter Demand & Capacity

- **35,265 MW** **Projected Total Internal Demand (coincident)**
- **37,106 MW** **Actual 2013/2014 winter peak demand ***
- **64,179 MW** **Existing Certain Capacity resources**
 - This capacity number represents Net Capability
- **1,200 MW** **Planned nameplate wind added during winter assessment timeframe**

* January 6th, 2014 and aligns with the 2014 Polar Vortex Event

Major Transmission Additions

- **Approximately 377 miles of transmission expected to be added during the winter assessment timeframe (December-February)**
 - **Thistle – Woodward 345 kV line (214 miles)**
 - **Newhart Intg. – Swisher County 230 kV line (19 miles)**
 - **Roosevelt County – Pleasant Hill 230 kV line (30 miles)**
- **Several new transformer additions expected be added during the winter assessment timeframe**



Reliability and Reserves

- **Reserve margins adequate**
 - SPP members required to maintain **12% capacity margin** - translates to a **13.6% reserve margin**
 - **Forecasted reserve margin is 81% for winter 2014/2015**
- **Reliability Concerns**
 - **Coal delivery continues to be an emerging issue**
 - **Wind integration continues to be an active issue**
 - **Extreme weather not expected to impact reliability**



Generation Outage Impact Study

- **SPP continues its bi-annual study process**
 - 4-year look ahead for reliability issues
 - Weekly snapshots through the 4 years
 - Scheduled outages taken into account
- **No expected impact in 2014/2015 winter timeframe**



Key Topics

- Cybersecurity Legislation
- Cyber Risk Information Sharing Program (CRISP)
- Personnel Security Clearances
- NERC Physical Security Efforts
- GridEx III

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Cybersecurity Legislation

- Numerous bills circulating around The Hill, but none have traction
- Republicans and Democrats have very different views on cybersecurity, as they do on most everything else
- Administration plans a shift to “bite-sized” approach, rather than omnibus bill
- Elections will have large influence on future of cyber legislation

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CRISP

- A program to identify cybersecurity risks in real-time and notify affected entities
- Developed by Pacific Northwest National Labs
- Real-time inspection of participation inbound and outbound traffic with comparison against classified intel
- Initial plans to deploy to 28 utilities at a cost of \$10M (~ \$400K per participant)

Personnel Clearances

- The Electric Sector Coordinating Council recently approved a guidebook for security clearances in electric sector
- Entities are encouraged to seek clearances through DHS Infrastructure Protection
- Outlines requirements for clearance holders
 - “Use it or lose it”
 - Training requirements
 - “Need to know”

Physical Security Efforts

- NERC raising importance of physical security efforts
- Bob Canada, long-time CIPC member and now CIPC Secretary, has assumed position of Manager, Physical Security
 - Part of the ES-ISAC organization
- Bob will lead NERC's physical security efforts going forward

GridEx III

- Third bi-annual continent-wide grid exercise, GridEx III, is scheduled for November 18-19, 2015
- Task Force refreshing membership
- Starting earlier this time around
- Will have PR materials available in advance of exercise to stay ahead of conspiracy theorists

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GridEx III Goals

- Exercise Crisis Response and Recovery
 - Move beyond Response
- Continue to Improve Communication
 - NERC-Industry, Industry-NERC
- Identify Lessons Learned
- Engage Senior Leadership

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Questions?



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**NERC Critical Infrastructure Protection Committee (CIPC)
Report to Southwest Power Pool Regional Entity Trustees
Submitted by Robert McClanahan, Chair, SPP Critical Infrastructure Protection WG
October 16, 2014**

NERC CIPC Meeting

- The NERC CIPC held its quarterly meeting in Vancouver, BC on September 16-17, 2014. The materials for this meeting can be found at:
 - Agenda:
 - [http://www.nerc.com/comm/CIPC/Agendas%20Highlights%20and%20Minutes%202013/\(Word\)%20Agenda%20--%20CIPC%20--%20September%2016-17,%202014%20-%20Revised.pdf](http://www.nerc.com/comm/CIPC/Agendas%20Highlights%20and%20Minutes%202013/(Word)%20Agenda%20--%20CIPC%20--%20September%2016-17,%202014%20-%20Revised.pdf)
 - Presentations:
 - <http://www.nerc.com/comm/CIPC/Agendas%20Highlights%20and%20Minutes%202013/Presentations%20-%20September%2016-17,%202014.pdf>
 - Draft Minutes:
 - A copy of the draft minutes are attached to this report, but can also be found at: <http://www.nerc.com/comm/CIPC/Agendas%20Highlights%20and%20Minutes%202013/CIPC%20Draft%20Minutes%20for%20Sept%2016-17%202014%20-%20JG%20RDC%20JG%20v5.pdf>
 - The minutes from the meeting address the majority of topics that were presented at CIPC. The report below provides additional information on several of those items.
- There have been some organizational changes in the CIP program at NERC.
 - Bob Canada has moved to the ES-ISAC and assigned the position of Physical Security Manager and will report to Brian Harrell. He will now lead all physical security initiatives for the ES-ISAC. This includes creation of the physical security maturity model, physical security portal enhancements, outreach on best practices, and lead on physical security Alerts to industry. Bob will continue to support the Physical Security WGs within the CIPC.
 - Laura Brown Laura, as the Manager of CIP Policy and Coordination, will continue to lead all security policy efforts for the NERC Security Department. Laura will keep constant coordination with NERC's external affairs department in an effort to educate trades and congressional staffs on ES-ISAC capabilities. Laura will become the CIPC Secretary to perform NERC staff support and provide guidance to the CIPC, the CIPC Chair and CIPC Executive Committee. Laura will report to Tim Roxey.
- Matt Light of the NERC ES-ISAC discussed several items of interest related to the ES-ISAC:
 - The ES-ISAC will be the project manager for the Cyber Risk Information Sharing Program (CRISP) going forward. The ES-ISAC has contracted with the Pacific Northwest National Lab (PNNL) to have access to CRISP technologies.
 - Participating utilities will execute a Master Services Agreement with the ES-ISAC to deploy the service. All income and expenses related to CRISP will flow through the NERC budget (i.e. utilities pay ES-ISAC; ES-ISAC pays PNNL).

- Twenty-eight entities are participating at a total estimated cost of \$10M. This would make the deployment of CRISP a \$350K investment per participating utility.
- Nathan Mitchell of APPA provided an overview of legislative activities related to infrastructure protection on Capitol Hill. No legislation is expected to move in the foreseeable future.
- Tim Conway, SANS, Chair of the Grid Exercise Working Group (GEWG), reported on preparations for GridEx III, scheduled for November 18-19, 2015.
 - The working group is doing a membership refresh and is seeking nominations for membership. Individuals can self-nominate.
 - The goal for GridEx III will be to raise the bar above the previous two exercises and extend into the areas of Recover and Restore. Previous exercises have been focused on Response.
 - Companies need to be thinking now about how involved they want to be involved in the exercise. The working group hopes that companies will engage their operations personnel in the exercise, and will be making CEHs available for operators who participate.
 - The GridEx Contractor is starting on exercise development earlier this time around to provide more time to prepare the exercise.
 - The working group will be developing and implementing a media strategy earlier than last time to head off public perception issues. There was great confusion and some genuine (yet misdirected) concern that NERC was going to “turn off the grid” during GridEx II.
- The Personnel Security Clearance Task Force (PSCTF) has been working with the Electric Sector Coordinating Council to develop a guidebook for obtaining security clearances in the sector. The ESCC adopted this guidebook at its meeting on October 8th. A few highlights:
 - Upon receipt of a security clearance, an individual will be required to complete initial and recurring annual training on the use of a clearance.
 - Clearance holders will be required to submit Report of Foreign Travel for ANY travel outside of the US going forward, regardless of the purpose of travel.
 - Clearances will be terminated if any of the following conditions occur:
 - Termination of the individual’s “need to know”;
 - Failure to complete initial or annual training;
 - Change in employment;
 - Name change;
 - Citizenship change; or
 - Non-use of a clearance for one year.
- Mr. Wayne VanOsdol, of the North American Transmission Forum (NATF) Security Practices Group, discussed several efforts in progress at NATF. They are developing guidance documents for CIP-002-5 (BES Cyber System Identification) and CIP-014-1 (Physical Security). NERC is working with NATF to coordinate efforts and avoid duplication of effort in development of this guidance.
- NERC’s 4th annual Grid Security Conference was held on October 14-17 in San Antonio, TX. The conference was well-attended, with several SPP Member Companies participating. The conference agenda can be found at:

<http://www.nerc.com/pa/CI/CIPOutreach/Pages/GridSecCon%202014%20Agenda%20FINAL.pdf>

- CIPC Meeting Schedule for remainder of 2014:
 - December 9-10, 2014 – Atlanta, GA

Critical Infrastructure Protection Committee Draft Minutes

September 16-17, 2014

Hyatt Regency Vancouver
655 Burrard Street
Vancouver, BC, Canada V6C2R7

The Critical Infrastructure Protection Committee (CIPC) Chair Chuck Abell called the meeting to order and being duly noticed, the regular meeting of CIPC on September 16, 2014 began at 1:00 p.m. (PST). Mr. Bob Canada, CIPC Secretary declared a quorum to conduct business with 33 members present. The meeting announcement, agenda, and a list of attendees are attached as **Exhibits A, B, and C** respectively.

Note: Slide presentations from this meeting are available at: [Meeting Presentations](#)

Secretary Canada announced a quorum achieved with 30 of the 31 members present which includes the following proxies:

1. **APPA** – Mr. Scott Smith replacing for Mr. David Godfrey
2. **FRCC** – Mr. Carlos Maldonado representing for Mr. Joe Garmon
3. **MRO** – Mr. Damon Ounsworth representing for Mr. Paul Crist
4. **NPCC** – Mr. John Helme representing for Mr. Greg Goodrich
5. **NRECA** – Mr. Brian Gardner representing for Mr. Robert Richhart
6. **RFC** – Mr. Mikail Falkovich representing for Mr. Kent Kujala
7. **SERC** – Mr. Don Roberts representing for Mr. Ed Goff
8. **SERC** – Mr. Darren Myers SERC Alternate
9. **SPP** – Ms. Megan Wagner representing for Mr. Allen Klassen
10. **SPP** – Ms. Jennifer Flandermeyer representing for Mr. John Breckenridge

Opening Remarks from Mr. Jim Attridge, BC Hydro (Presentation 1)

Meeting Safety Briefing – Hyatt Regency staff

The security and safety staff briefed CIPC and attendees on safety and emergency evacuations procedures to include rally points outside the hotel.

NERC Antitrust Compliance Guidelines

Secretary Canada called attention to the NERC Antitrust Compliance Guidelines distributed with the agenda and read the statement concerning publicly announced meetings.

Introductions of Members, Proxies, Alternates, Associates, and Others

Chair Abell called for introductions of CIPC members and other attendees. He requested that all present in the meeting, sign the attendance sheets.

Consent Agenda

Upon motion by Chair Abell to approve the Consent Agenda including the posted CIPC Agenda for the June 10-11, 2014 meeting. The Consent Agenda was approved by CIPC without any corrections edits or modifications.

CIPC Chair's Report

Mr. Abell provided CIPC with a report, covering CIPC's past, present, and future actions. Mr. Abell placed special emphasis upon the reports made on behalf of CIPC to the NERC Board of Trustees and the Electricity Sub-sector Coordinating Council (ESCC) meetings. He commented on the GridEx III work that has begun and the support CIPC is providing through the Grid Exercise Working Group (GEWG), chaired by Tim Conway. He also stated the CIPC Executive Committee will begin the Annual Planning for the CIPC Strategic Plan 2015-2018. (Presentation 2)

Critical Infrastructure Protection Director's Remarks

Mr. Matt Blizzard briefed CIPC on the following topics: GridEx II, GridSecCon, Critical Infrastructure Protection Transition Guidance, CIP-014-1 Physical Security Standard, and the Transition Implementation Study. (Presentation 3)

Electricity Sector Information Sharing and Analysis Center (ES-ISAC) Update

Mr. Phillip Daigle covered updates to the ES-ISAC portal for Owners and Operators future use and a timetable of activities going on now. Mr. Matt Light briefed on the Cyber Risk Information Sharing Program (CRISP) program, which is a natural maturation of NERC's cybersecurity initiatives, will improve the ES-ISAC's ability to detect threats and the reliability of the bulk power system. The addition of this program is consistent with NERC's philosophy that bulk power system operators are best able to protect the system when they are provided information to better understand a threat to reliability. (Presentation 4)

Legislative Update

Mr. Nathan Mitchell, American Public Power Association, briefed CIPC on current legislation pending or contemplated as well as the impact upon the industry through the U.S. House and Senate. (Presentation 18)

CIP V5 Transition

Mr. Scott Mix covered responsibilities of the electric reliability organization, NERC and Regional Entities, transition elements, CIP market segmentation, outreach approach, compliance monitoring during the transition period and updated critical cyber asset list and others while answering questions of the attendees. (Presentation 5)

CIP Version 5 Revisions

Mr. Mix briefed CIPC on the development steps, CIP-003-6 revisions, CIP-010-2 revisions, and finally posting. (Presentation 6)

Reliability Issues Steering Committee (RISC) Update and the Reliability Risk Control Process

Mr. Jim Brenton, CIPC representative to RISC, briefed on the RISC progress. He shared the September 11th Leadership Summit and the key strategies to address BES reliability challenges, cyber and physical security issues, risk profiles, and priorities to be covered by the RISC. (Presentation 7)

Security Review Program (SRP)

Mr. Mix briefed CIPC on the 2013 SRP overview, program status, preliminary lessons-learned, best practices, and other observations. (No Presentation)

Physical Security Implementation – CIP-014-1

Mr. Crutchfield briefed on the background of the standard, FERC Order summary, NOPR concerns, applicability, requirements, and implementation.

Operating Security Subcommittee – Chair Jim Brenton (No presentation)**Electricity Sector Information Sharing Task Force (ESISTF)**

Chair Stephen Diebold briefed CIPC on the ESISTF status of work completed. The presentation briefed on the tasks being assigned by the CIPC Executive Committee from the GridEx II Report. (Presentation 8)

GridEx Working Group (GEWG)

Chair Tim Conway briefed on GridEx dates and entity preparation, increased Reliability Coordinator focus, refreshing the working group and a timeline for accomplishing the tasks in preparation for the GridEx III on November 18-19, 2015.

Business Continuity Guideline Task Force (BCGTF)

Chair Darren Myers briefed on the task force charter being passed by email vote, charter objectives from the GridEx II lessons learned and a solicitation of members and a timeline for accomplishing the tasks in preparation for the GridEx III on November 18-19, 2015.

Policy Subcommittee – Chair Mr. Nathan Mitchell (No Presentation)**Personnel Security Clearance Task Force (PSCTF)**

Chair Nathan Mitchell briefed on PSCTF is awaiting for ES-ISAC's collaboration to process and track industry clearance applications. He briefed on next steps including ESCC coordinating with Department of Homeland Security to develop a series of playbooks on who should apply for clearances, expectations of holders, and a process for prioritizing and monitoring nominations. (Presentation 9)

Bulk Electric System Security Metrics Working Group (BESSMWG)

Mr. James Sample briefed by conference call on the ongoing progress to include the ES-ISAC activities, workshop to be held in August and solicited volunteers to attend and provide feedback to the work presented in the presentation and possible alternatives in more detailed measures/metrics. (Presentation 10)

Compliance and Enforcement Input Working Group (CEIWG)

Mr. John Galloway, on behalf of Chair Paul Crist gave a progress report on the working group. Mr. Galloway covered discussions on CEIWG conference calls including transition guidance review, FERC physical security order, virtualization whitepaper update, and CIP V5 revisions standard drafting team update. (Presentation 11)

Cyber Security Subcommittee – Chair Mr. Marc Child

Mr. Child gave an overview of the subcommittee's activities, including the Cyber Attack Tree Task Force and Cyber Security Events Analysis Working Group. (Presentation 12)

Control Systems Security Working Group WG (CSSWG)

Chair Mikhail Falkovich reported that the charter was approved by CIPC email ballot. The update covered the following items: the solicitation of additional members, their first assignment of business network connectivity, the GridEx II Distributed Play Report specifically the Lessons Learned #4 contained in the Recommendations Summary and the NIST Mapping Project to map NIST CIP V5 and CIP V3. (Presentation 12)

Cyber Attack Tree Task Force (CATTF)

Subcommittee Chair Marc Child reported on behalf of Chair Mark Engels, Mr. Child gave an update on the activities which included working on the attack trees and augmenting them to incorporate more mitigations and also determining when to turn attack tree over to ES-ISAC. (Presentation 12)

Cyber Security Analysis Working Group (CSAWG)

Mr. Child gave an update on recent activities which included obtaining a new chair, continue to liaise activity with the ES-ISAC, the Cyber Security Training Working Group, Events Analysis Subcommittee, restarting the quarterly calls, emails and portal postings and then developing of priorities and creation of, and obtaining approval for the cyber events analysis process document. (Presentation 12)

Physical Security Subcommittee – Chair Mr. David Grubbs (No Presentation)**Physical Security Guideline Task Force (PSGTF)**

(No Presentation)

Physical Security Working Group (PSWG)

Chair Ross Johnson briefed CIPC on activities contemplated. The PSWG through the Physical Security Roundtable Group (PSRG) has 122 members. Collaboration with the Security Training

Working Group resulted in successful webinars for Physical Security Assessments and Mitigation Strategy presented by Mr. Mike O'Brien from Lawrence Livermore Lab, updated progress of the Physical Security Drafting Team and Active Shooter Program Development. (Presentation 13)

The CIPC Meeting on September 16th was concluded for the day at 5:13 p.m. (PST) and was reconvened on September 17th at 8:00 a.m. (PST)

Security Training Working Group (STWG)

Chair William Whitney reported on the latest activities including the announcement of additional training opportunities using CIPC workshops and webinars. (Presentation 14)

North American Transmission Forum (NATF) Security Practices Group Activity Update

Mr. Wayne VanOsdol, NATF staff, briefed CIP-002 v5 Practices Guide, Physical Security Project on CIP-014-1 R4 and R5 Practices Guide and the Modeling/Planning Project Update on CIP-014-1 Assessment Guide. He also stated the NATF was interested in the collaboration on CIP-014-1 with NERC and CIPC. (Presentation 15)

Agency Updates

Department of Energy – Mr. Jim McGlone and Mr. Jason Christopher

Adjournment

There being no further business and upon motion to adjourn by Chair Abell. The motion was approved by CIPC with adjournment on September 17th at 11:45 a.m. (PST).

Submitted by,

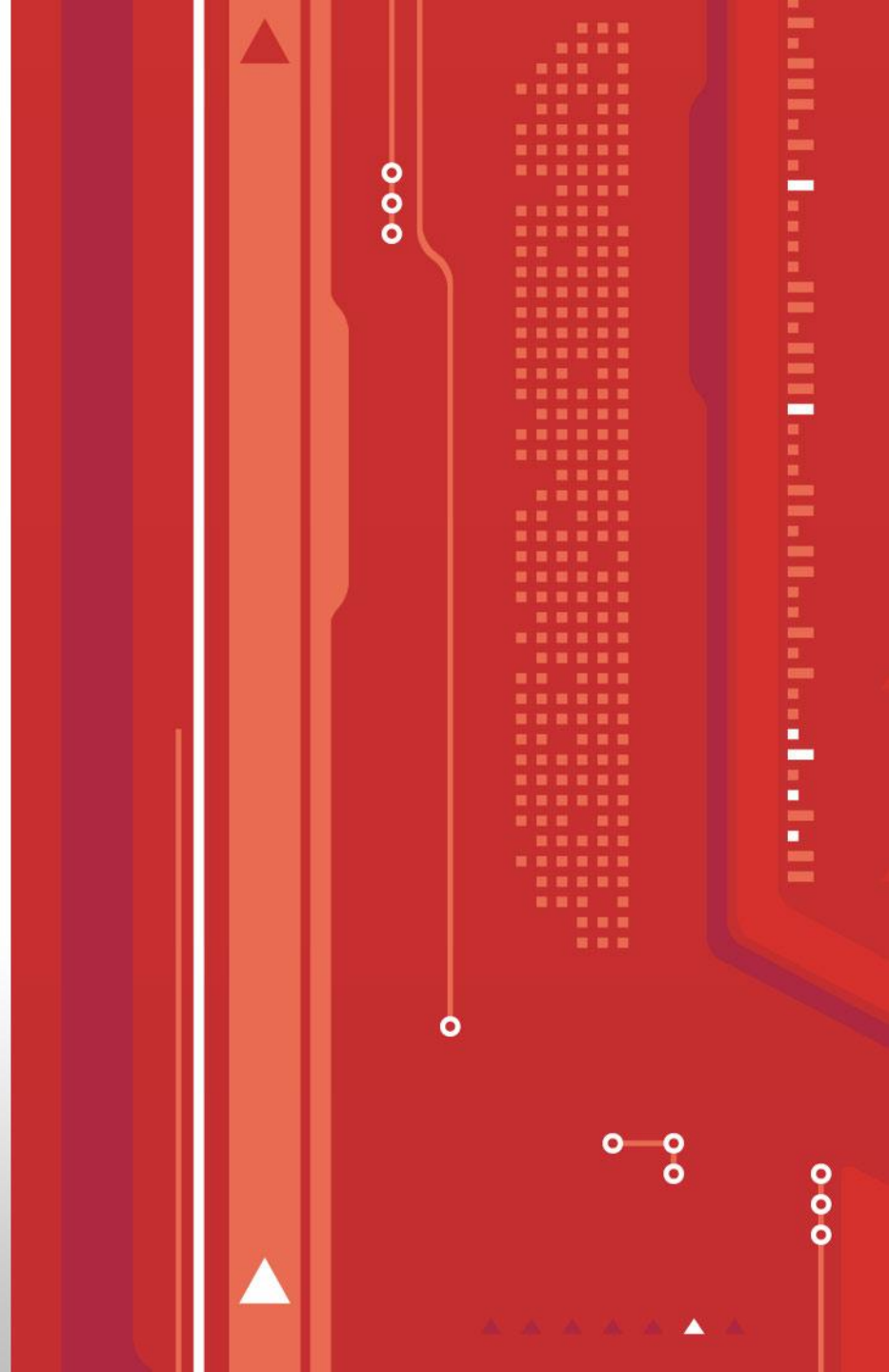
R.D. Canada

Bob Canada
CIPC Secretary

CIP Update

October 27, 2014

Kevin B. Perry
kperry.re@spp.org · 501.614.3251



Agenda

- CIP V5 Revisions.
- CIP V5 Transition.
- CIP V5 Outreach.

CIP V5 Revisions

- **Second revisions posted for comment and ballot.**
 - **Comment/ballot period closed 8:00 PM EDT October 17, 2014.**
 - **CIP-003-6 and CIP-010-2 contained proposed revisions to address low impact and transient devices.**
 - **CIP-003-X and CIP-010-X only included “Identify, Assess, and Correct” (IAC) language.**
 - **CIP-004-X, CIP-007-X, and CIP-011-X also posted to remove low impact and transient device references.**
 - **Both versions posted in order to meet FERC filing schedule if low impact and/or transient device revisions were rejected again by the ballot body.**

CIP V5 revisions

- **CIP-003-6 changes since first ballot:**
 - Revised Effective Dates for revised elements.
 - Moved policy requirements for low impact BES Cyber Systems into Requirement R1.
 - Requirement R2 revised to require implementation of cyber security plans for low impact BES Cyber Systems.
 - Violation Severity Level tables updated.
 - Added Attachment 1 (Required Elements) and Attachment 2 (Examples of Evidence) for Cyber Security Plan(s) for Assets Containing Low Impact BES Cyber Systems.
 - Defined “policy” and updated Guidelines and Technical Basis section.

CIP V5 Revisions

- **CIP-010-2 changes since first ballot:**
 - **Revised Requirement R4 to remove compliance detail and to refer to Attachment 1 instead.**
 - **Revised Violation Severity Level tables for Requirement R4.**
 - **Added Attachment 1 (Required Elements) and Attachment 2 (Examples of Evidence) for Plans for Transient Cyber Assets and Removable Media**
 - **Revised Guidelines and Technical Basis discussion for Requirement R4.**

CIP V5 Revisions

- **Ballot Results:**

<u>Ballot</u>	<u>Quorum</u>	<u>Weighted Segment Vote</u>
CIP-003-6	82.68%	68.77%
CIP-010-2	82.68%	74.67%
CIP Version X	83.17%	93.65%
CIP-003-6 Definitions	82.44%	79.97%
CIP-010-2 Definitions	81.95 %	85.64 %
CIP Implementation Plan	82.20%	89.07%

- **Drafting team will review comments before reposting for final ballot.**

CIP V5 Transition

- **Pending Guidance:**
 - Far-end Relay (AKA Transfer-Trip)
 - Programmable Electronic Devices
 - Generation Segmentation
 - Virtualization (Networks and Servers)
 - Serial Devices that are accessed remotely
 - Control Centers operated by TOs and non-registered BAs
 - Interactive Remote Access (Scripts and Management consoles)
 - Generation Interconnection (definition)
 - Shared Substations
 - Mixed Trust Electronic Access Control or Monitoring Systems
 - DC Lines and DC Tie Substations
 - General FAQs

CIP V5 Transition

- **Guidance being developed by CIP V5 Transition Study participants.**
- **Will be reviewed by CIP V5 Stakeholders Advisory Group.**
- **Guidance other than the FAQ expected to be posted for industry comment per Section 11 (Process for Approving Supporting Documents) of the Standard Processes Manual (Appendix 3A to the NERC Rules of Procedure).**
- **Standards Committee ultimately approves publishing as Guidance in Support of a Standard.**

CIP V5 Outreach

- SPP RE CIP staff meeting bi-weekly with group of SPP CIPWG members to answer CIP V5 questions.
- Questions and answers are being forwarded to NERC and the other Regions.
- Considering publishing a FAQ on the SPP RE web site.
 - More timely than waiting for NERC to update FAQ.
 - Answer could change after NERC/Region/Stakeholder Advisory Group review.
- Would like to partner with SPP RTO Compliance Department to conduct CIP V5 outreach.

SPP RE CIP Team

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(501) 614-3251
- **Shon Austin**, Lead Compliance Specialist-CIP
(501) 614-3273
- **Steven Keller**, Lead Compliance Specialist-CIP
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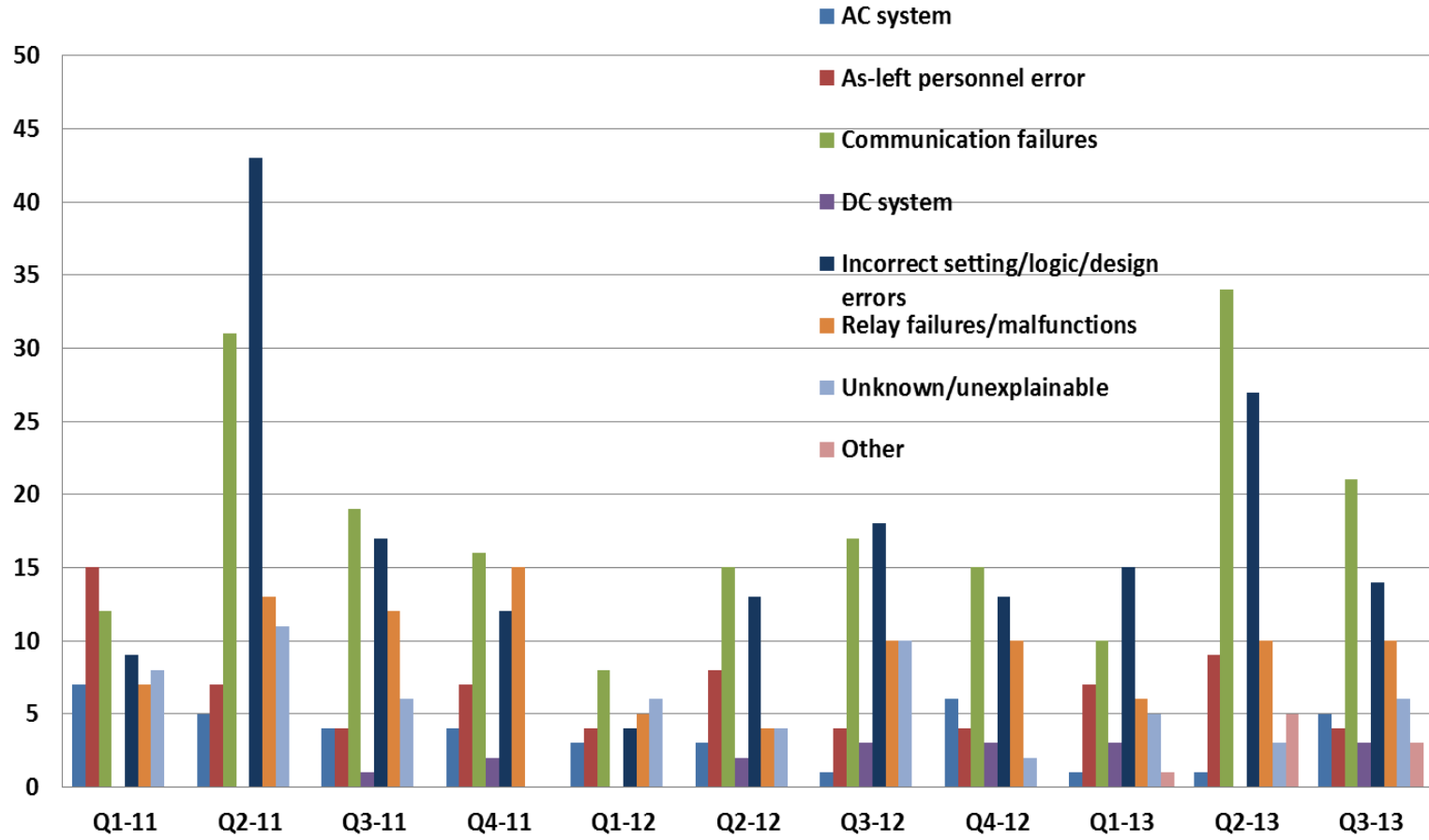
Relay Communication Misoperations

Southwest Power Pool
System Protection and Control
Working Group

Relay Misoperations

- The fundamental objective of power system protection schemes is to quickly provide isolation of a system problem while leaving the remainder of the system intact. There are times, however, that the protection system operates incorrectly or “misoperates”.
- A misoperation occurs when a protective relaying scheme trips for a disturbance or fault outside of its zone of protection, which can result in unintended outages.

Misoperations in SPP



Misoperations Analysis

- SPP had the highest percentage of misops of any region in the U.S. in 2013.
- Communications related misops are a leading cause.
- Analysis was performed on misops over a 1 year period from Q4 2012 through Q3 2013.
- Purpose is to determine the root causes associated with communication system failures.
- Also provide lessons learned that can be applied to reduce the number of future misops.

Design Considerations

- Communication assisted protection schemes are applied to provide high speed tripping for faults over 100% of the transmission line length. These schemes are not mandatory from a regulatory perspective unless driven by a transmission planning (TPL) compliance concern such as critical clearing time to maintain stability. These schemes are typically installed to improve power quality and reduce equipment damage due to fault duration.

Design Considerations

- These communication assisted schemes are designed to provide either increased dependability or increased security. These are defined as:
 - Dependability – the assurance that any fault will be cleared.
 - Security – the assurance that a trip occurs only for faults on the protected line.

Design Considerations

Three common types of communications assisted schemes

1. Differential – Operates on the principle that the relays at all ends of a line measure the current and communicate to ensure that the amount of current going into the line equals the current going out, or else a fault is assumed.
 - This scheme is biased more toward security than dependability.

Design Considerations

Three common types of communications assisted schemes

2. Permissive – Operates on the principle that the relays at all ends of a line detect a fault and communicate to agree that the fault appears in the forward looking direction (on the protected line) for which a trip with no intentional time delay will occur. Otherwise, a trip occurs only after a time delay.
 - This scheme is biased more toward security than dependability.

Design Considerations

Three common types of communications assisted schemes

3. Blocking – Operates on the principle that the relays at all ends of a line each individually detect a fault and that the fault appears in the forward looking direction, for which they trip with no intentional time delay, unless a remote end relay communicates that the fault is in the reverse direction. Only then will they trip after a time delay.
 - This scheme is biased more toward dependability than security.

Blocking Schemes

- Blocking schemes (also referred to as Directional Comparison Blocking or DCB) are typically chosen when a failure to trip will be more detrimental to the system than over-tripping.
- Blocking schemes are the most commonly used type of design because they allow relay engineers to take a more conservative approach toward protection.
- The relays have a directional characteristic – to differentiate forward faults from reverse faults.

Blocking Schemes

- These schemes are immune to failing to trip for a fault on the protected line if communication is lost in conjunction with that fault, since tripping will occur when no signal (Block) is received.
- These schemes are designed to reach (to detect faults) past the end of the line and trip with no intentional delay unless a signal is received from the remote end to block the local breaker from tripping. This provides dependability but increases the chance of over-tripping if the block signal is not received for faults beyond the remote end breaker, making the scheme less secure.

Risk Assessment and Operating Considerations

Occasionally a deteriorated communication scheme will need to be temporarily left in service due to customer considerations (avoiding prolonged voltage dip). Should this decision be made, there remains a possibility of misoperations until corrective actions can be completed. Stability related issues and risk of equipment damage can also be reasons to keep a deteriorated scheme in service.

Analysis Approach

- Same as a recently completed (April 2013) analysis by the NERC Protection System Misoperations Task Force (PSMTF). The PSMTF came up with “sub-causes” for misoperations related to communications failures. The SPCWG chose to use these same sub-causes for its analysis, to provide consistency with the PSMTF’s analysis. The PSMTF determined that these misoperations could be broken down into one of five sub-causes.

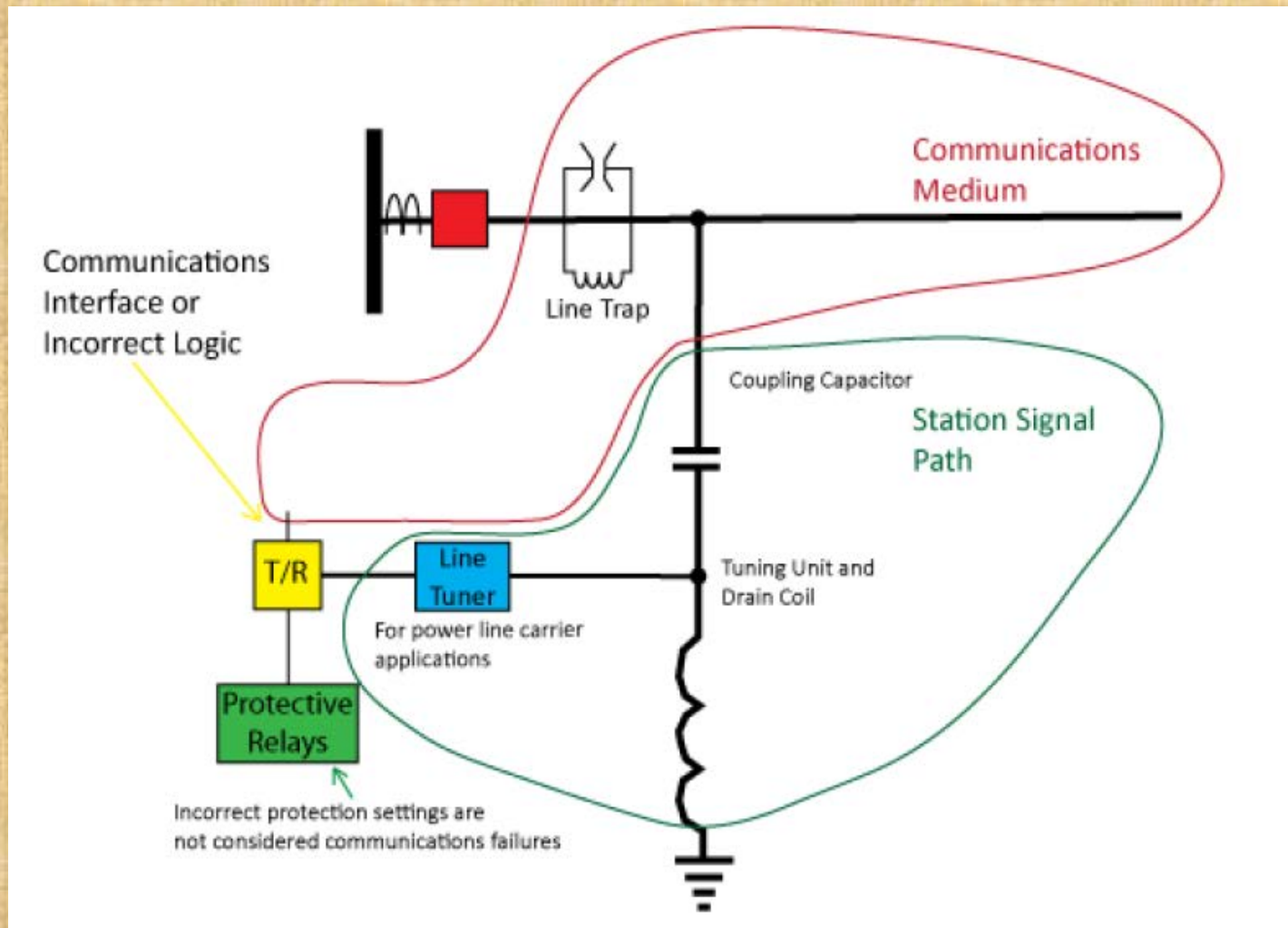
Analysis Approach

PSMTF sub-causes

1. Communication Interface Failure (Modulator): Power-line carrier radios, fiber optic interfaces, microwave radios, audio-tone/telecommunications, and pilot wire components.
2. Communication Medium: The external signal path, leased phone circuits, cables, transmission lines, etc.
3. Station Signal Path Failure: All signal carrying components within the substation fence including cables, frequency filters, connectors, etc.
4. Incorrect Logic Settings Issued: Channel timing, dip switches, etc. Protective relay settings were considered as a settings problem and not counted as a logic issue. (This is difficult to determine when digital relays contain both logic and settings).
5. Human Error (Misapplication in field): Incorrect settings both logic and relay reach, as left conditions, etc.

In addition there were some events for which there was insufficient information.

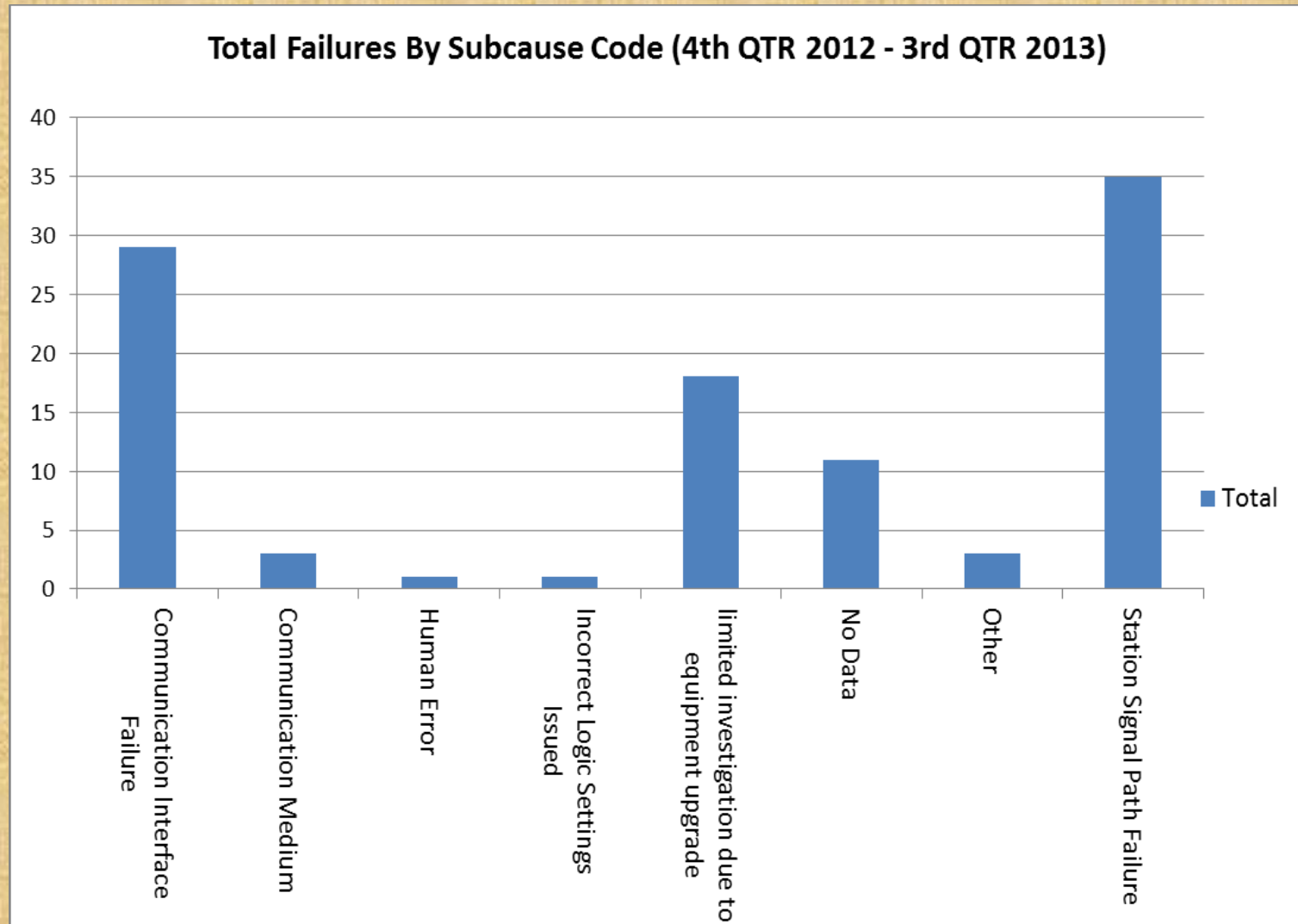
Components of a Typical Power Line Carrier Scheme



Analysis of SPP Misops

- The SPCWG added two additional categories of sub-causes:
 - Limited Investigation Due to Equipment Upgrade
 - Other
- The SPCWG reviewed 101 misoperations that occurred in SPP for the one year period. The two sub-causes with the most misoperations were
 - 1.) Communication Interface Failure, and
 - 2.) Station Signal Path Failure.

Results of Sub-cause Analysis



Comparison to PSMTF Analysis

Sub-cause	SPCWG Analysis	NERC Analysis
Communication Interface Failure (Modulator)	29%	32%
Communication Medium	3%	16%
Station Signal Path Failure	35%	17%
Incorrect Logic Settings Issued	1%	6%
Human Error	1%	3%
Insufficient/No Data	11%	27%
Limited Investigation Due To Equipment Upgrade	18%	
Other	2%	---

Root Causes for each Sub-cause

1. **Communication Interface Failure** (yellow box)
 - Shorted surge protection (Transient Voltage Suppressor)
 - Failed Transceiver
2. **Communication Medium** (red area – high voltage)
 - Failed wave trap (tuning out of adjustment or malfunction)
 - Loss or degradation of signal (microwave or tone signals)
 - Lack of wave traps at tapped load locations (results in loss of signal)
3. **Station Signal Path Failure** (green area – signal coupling)
 - Protective Gap calibration
 - Deteriorated spark gaps in the line tuner
 - Failed component in the line tuner
4. **Incorrect Logic Settings** (yellow box or green box)
 - Incorrect communication settings in the carrier or relay
5. **Human Error** (green area)
 - Carrier cutoff left off at one terminal and on at the other terminal.
 - Ground switch on CCVT left in “ground” position

Lessons Learned

- Equipment spark gaps, insulators, and surge arresters are known to cause carrier holes if not maintained properly
- Fiber optic communications provide increased reliability and security over microwave or power line carrier systems
 - Power Line Carrier systems are subject to “carrier holes”
 - Microwave systems have issues with signal fading
- End-to-end testing is advantageous during commissioning to find timing errors and to confirm signal quality
- Deteriorated, older equipment requires increased maintenance activity and is more likely to fail than newer equipment. Diagnostic capabilities are lacking as well.
- Mismatched equipment or differing setting philosophies at opposite ends of the line can create timing issues resulting in a misoperation.

Conclusions

- Communications assisted schemes add sophistication to line protection schemes:
 - provide the advantage of high speed clearing of faults to improve power quality and reduce damage to power equipment.
 - The increased complexity of these schemes also means there are more components that require maintenance and possible replacement when they become deteriorated.
- Knowing the root causes enables utilities to more accurately troubleshoot problems and take preventive measures to reduce the likelihood of misoperations in the future.
- The lessons learned provide specific information that can be acted on to help prevent misoperations.

Questions

???



An **SPP** White Paper

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Relay Communication Misoperations

By:
System Protection and Control Working Group
July 16, 2014

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Introduction

The fundamental objective of power system protection is to quickly provide isolation of a system problem while leaving the remainder of the system intact. There are times, however, that the protection system operates incorrectly or “misoperates” due to failure, malfunction, or various other reasons which may result in tripping of unfaulted elements.

Purpose

In recent years, relay misoperations within the SPP footprint have become a higher concern for SPP, the SPCWG, and for NERC. Analysis, as shown in Figure 1, indicates that misoperations due to communication system failure are a leading cause. This whitepaper discusses these communication misoperations and analyzes data taken over one year to determine their root cause. Lessons learned are then provided that can be translated into field application, thus reducing the number of future misoperations.

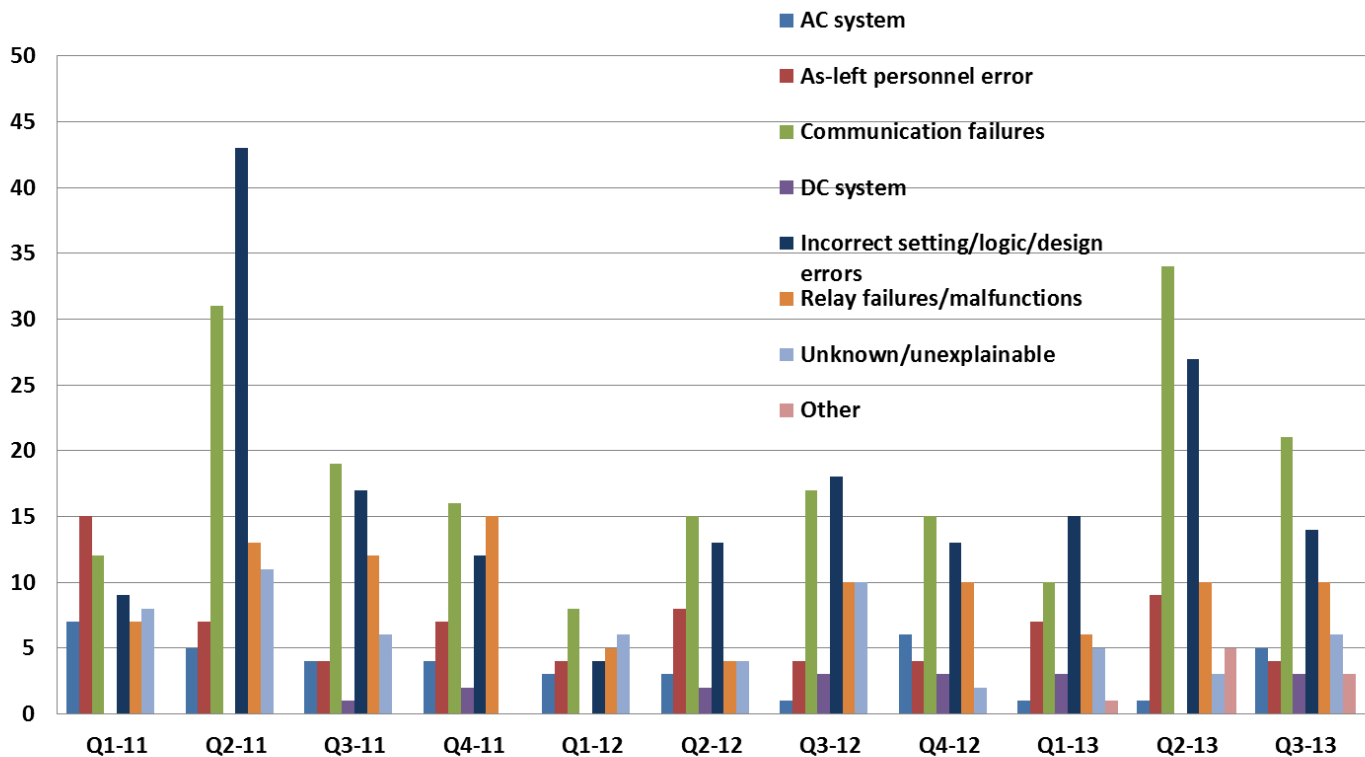


Figure 1: Misoperation Causes 1Q 2011 to 3Q 2013

Design Considerations

Communication assisted protection schemes are applied to provide high speed tripping for faults over 100% of the transmission line length. These schemes are not mandatory from a regulatory perspective unless driven by a transmission planning (TPL) compliance concern such as critical clearing time to maintain stability. These schemes are typically installed to improve power quality and reduce equipment damage due to fault duration.

These communication assisted schemes are designed to provide either increased dependability or increased security. These are defined as:

Dependability – the assurance that any fault will be cleared.

Security – the assurance that a trip occurs only for faults on the protected line.

The three (3) common types of communication assisted protection schemes are:

1. Differential – Operates on the principle that the relays at all ends of a line measure the current and communicate to ensure that the amount of current going into the line equals the current going out, or else a fault is assumed.

This scheme is biased more toward security than dependability.

2. Permissive – Operates on the principle that the relays at all ends of a line detect a fault and communicate to agree that the fault appears in the forward looking direction (on the protected line) for which a trip with no intentional time delay will occur. Otherwise, a trip occurs only after a time delay.

This scheme is biased more toward security than dependability.

3. Blocking – Operates on the principle that the relays at all ends of a line each individually detect a fault and that the fault appears in the forward looking direction, for which they trip with no intentional time delay, unless a remote end relay communicates that the fault is in the reverse direction. Only then will they trip after a time delay.

This scheme is biased more toward dependability than security.

Blocking schemes (also referred to as Directional Comparison Blocking or DCB) are typically chosen when a failure to trip will be more detrimental to the system than over-tripping. This scheme is immune to failing to trip for a fault on the protected line if communication is lost in conjunction with that fault, since tripping will occur when

no signal (Block) is received. These schemes are designed to reach (to detect faults) past the end of the line and trip with no intentional delay unless a signal is received from the remote end to block the local breaker from tripping. This provides dependability but increases the chance of over-tripping if the block signal is not received for faults beyond the remote end breaker, making the scheme less secure

Risk Assessment and Operating Considerations

Occasionally a deteriorated communication scheme will need to be temporarily left in service due to customer considerations (avoiding prolonged voltage dip). Should this decision be made, there remains a possibility of misoperations until corrective actions can be completed. Stability related issues and risk of equipment damage can also be reasons to keep a deteriorated scheme in service.

Analysis of Communication Related Misoperations

To assist in the analysis of the communication related misoperations, the System Protection & Control Working Group (SPCWG) referred to a recently completed (April 2013) analysis by the NERC Protection System Misoperations Task Force (PSMTF). The PSMTF came up with “sub-causes” for misoperations related to communications failures. The SPCWG chose to use these same sub-causes for its analysis, to provide consistency with the PSMTF’s analysis. The PSMTF determined that these misoperations could be broken down into one of the following five sub-causes:

1. Communication Interface Failure (Modulator): Power-line carrier radios, fiber optic interfaces, microwave radios, audio-tone/telecommunications, and pilot wire components.
2. Communication Medium: The external signal path, leased phone circuits, cables, transmission lines, etc.
3. Station Signal Path Failure: All signal carrying components within the substation fence including cables, frequency filters, connectors, etc.
4. Incorrect Logic Settings Issued: Channel timing, dip switches, etc. Protective relay settings were considered as a settings problem and not counted as a logic issue. (This is difficult to determine when digital relays contain both logic and settings).
5. Human Error (Misapplication in field): Incorrect settings both logic and relay reach, as left conditions, etc.

In addition there were some events for which there was insufficient information.

Figure 2 identifies the communication components for a typical power line carrier scheme and related misoperation sub-causes¹.

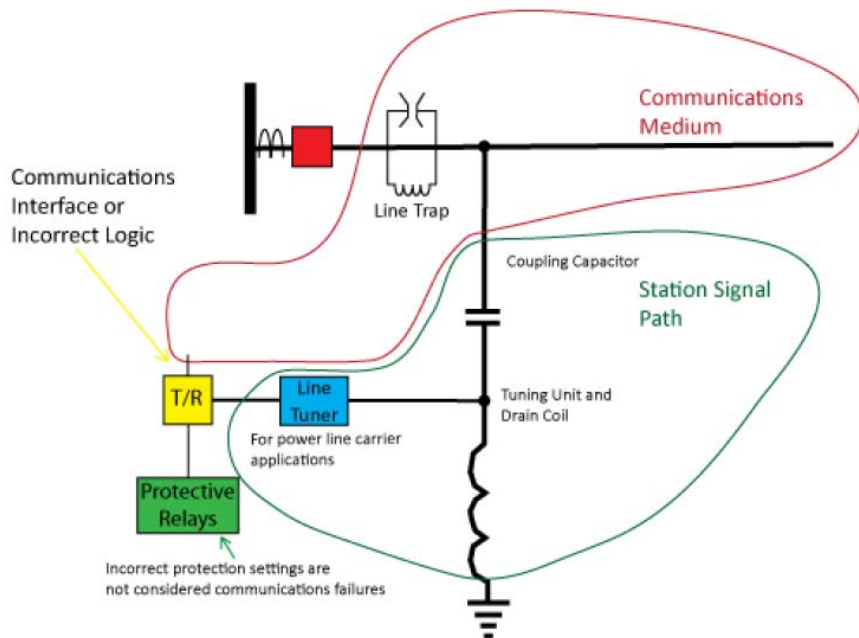


Figure 2: Communication Failure Misoperations

The SPCWG added two additional categories for misoperations for events that did not fit within the five PSMTF sub-causes. These are: Limited Investigation Due to Equipment Upgrade, and Other.

The SPCWG reviewed 101 misoperations that occurred in SPP for a one year period, from the fourth quarter of 2012 through the third quarter of 2013. The graph shown in Figure 3 shows the results of the analysis. The two sub-causes with the most misoperations were 1.) Communication Interface Failure, and 2.) Station Signal Path Failure.

The misoperations data shows that a majority of line protection schemes are designed to use Blocking systems. As described above, Blocking systems are more susceptible to misoperating when the communications system becomes deteriorated; however, blocking schemes are also more secure for clearing of faults when the communications system becomes deteriorated.

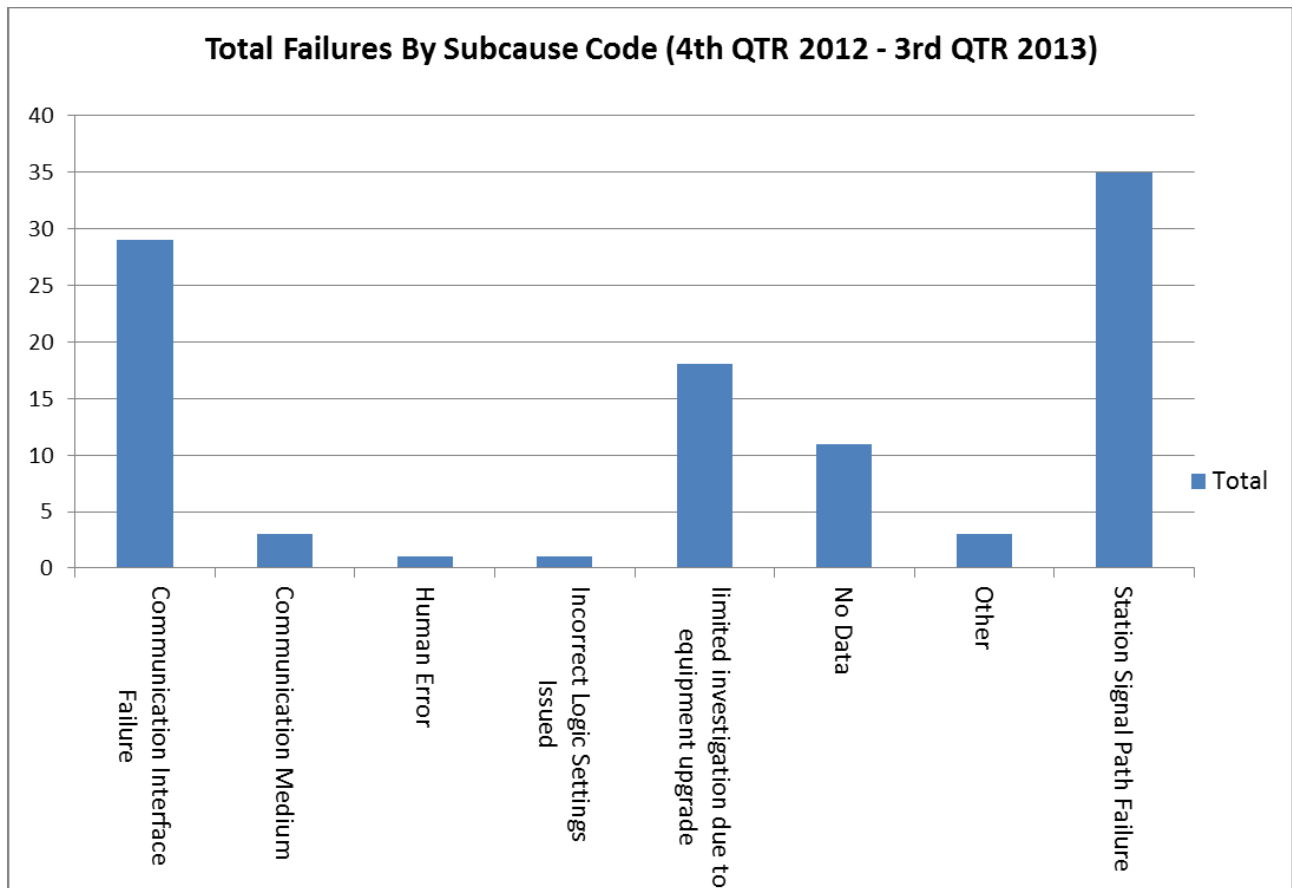


Figure 3: Total Failures By Sub-cause

Comparing the SPP analysis with the NERC PSMTF analysis, there were a few differences. The table below shows the percentage of misperations by sub-cause for both SPP and NERC.

Sub-cause	SPCWG Analysis	NERC Analysis
Communication Interface Failure (Modulator)	29%	32%
Communication Medium	3%	16%
Station Signal Path Failure	35%	17%
Incorrect Logic Settings Issued	1%	6%
Human Error	1%	3%
Insufficient/No Data	11%	27%
Limited Investigation Due To Equipment Upgrade	18%	
Other	2%	---

Table 1: SPP/NERC Communication Misoperation Sub-cause Comparison

Root Causes

The following are examples or possible root causes for each of the sub-cause categories.

1. Communication Interface Failure

- Shorted surge protection (Transient Voltage Suppressor)
- Failed Transceiver

2. Communication Medium

- Failed wave trap (tuning out of adjustment or malfunction)
- Loss or degradation of signal (microwave or tone signals)
- Lack of wave traps at tapped load locations (results in loss of signal)

3. Station Signal Path Failure

- Protective Gap calibration
- Deteriorated spark gaps in the line tuner
- Failed component in the line tuner

4. Incorrect Logic Settings

- Incorrect communication settings in the carrier or relay

5. Human Error

- Carrier cutoff left off at one terminal and on at the other terminal.
- Ground switch on CCVT left in "ground" position

Lessons Learned

Lessons Learned:

- Equipment spark gaps, insulators, and surge arresters are known to cause carrier holes if not maintained properly
- Fiber optic communications provide increased reliability and security over microwave or power line carrier systems
 - Power Line Carrier systems are subject to “carrier holes”
 - Microwave systems have issues with signal fading
- End-to-end testing is advantageous during commissioning to find timing errors and to confirm signal quality
- Deteriorated, older equipment requires increased maintenance activity and is more likely to fail than newer equipment. Diagnostic capabilities are lacking as well.
- Mismatched equipment or differing setting philosophies at opposite ends of the line can create timing issues resulting in misoperation.

Conclusions

Communications assisted schemes add sophistication to line protection schemes and provide the advantage of high speed clearing of faults, which improves power quality for our customers. The increased complexity of these schemes also means there are more components that require maintenance and possible replacement when they become deteriorated.

Historically, the most prevalent design used by utilities has been Blocking schemes which err on the side dependability, resulting in a tendency to trip unnecessarily rather than failing to trip. As a result, when the communications systems do not work properly, misoperations occur.

This document provides information on the background of the misoperations that have occurred in SPP and identifies root causes. Knowing the root causes enables utilities to more accurately trouble shoot problems and take preventive measures to reduce the likelihood of misoperations in the future. The lessons learned provide specific information that can be acted on to help prevent misoperations.

Reference

[1] *“Misoperations Report, Prepared by: Protection System Misoperations Task Force”*, by North American Electric Reliability Corporation (2013).

2014 RE Stakeholder Satisfaction Survey Results

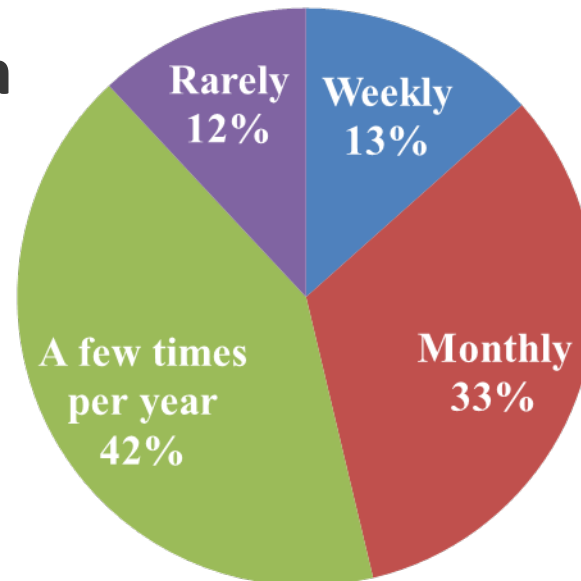
October 27, 2014

Ron Ciesiel
SPP RE General Manager

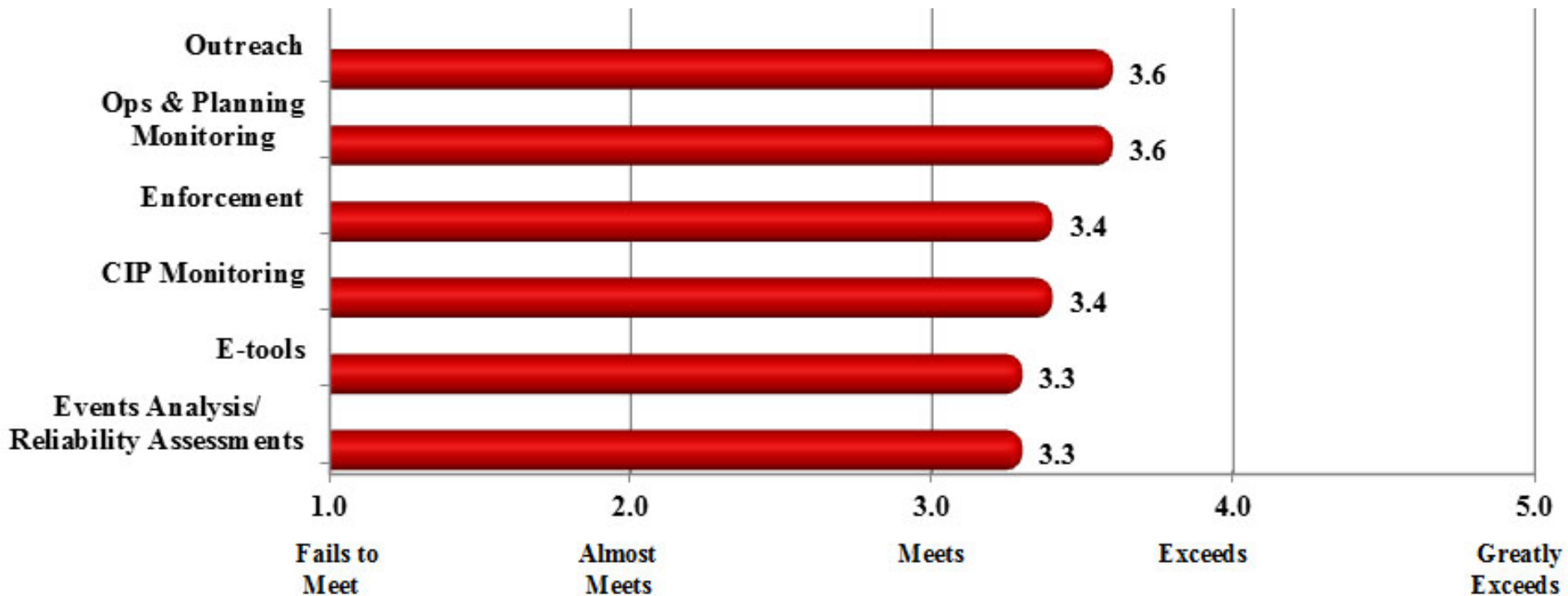


About the respondents

- Sent to Primary Compliance Contacts
- 76 respondents
 - 16 selected “opt out” option due to infrequent interaction
- 62% response rate
 - Up from 57% in 2013
- Frequency of interaction

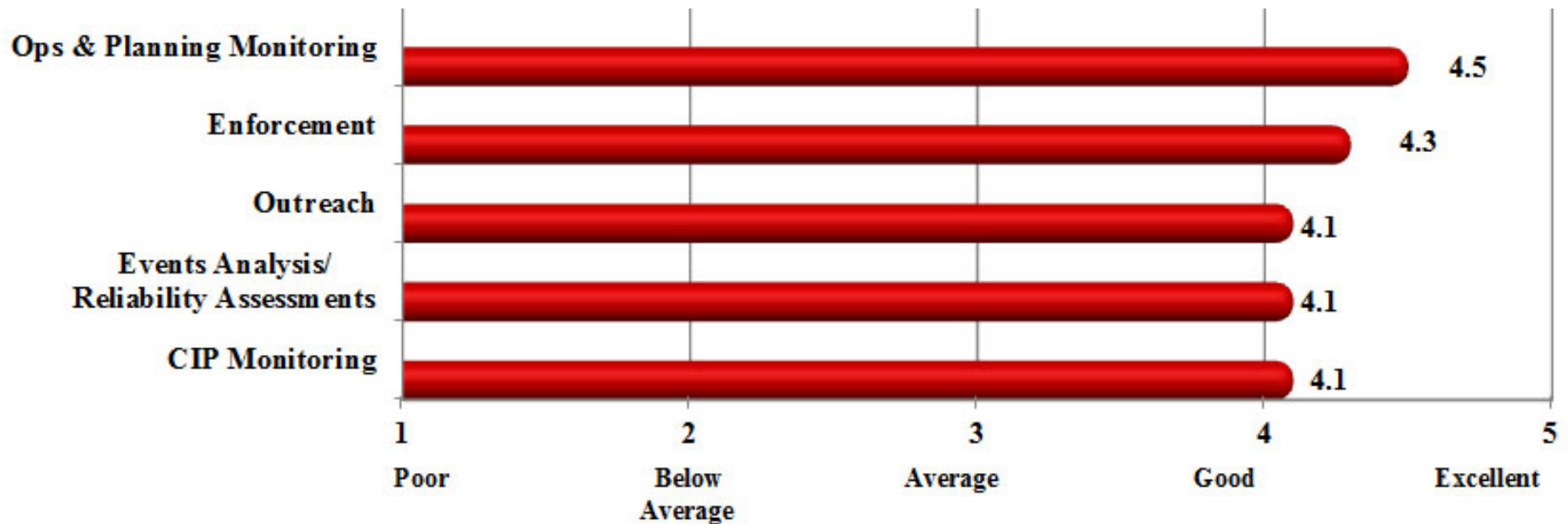
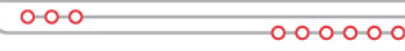


How well program meets expectations



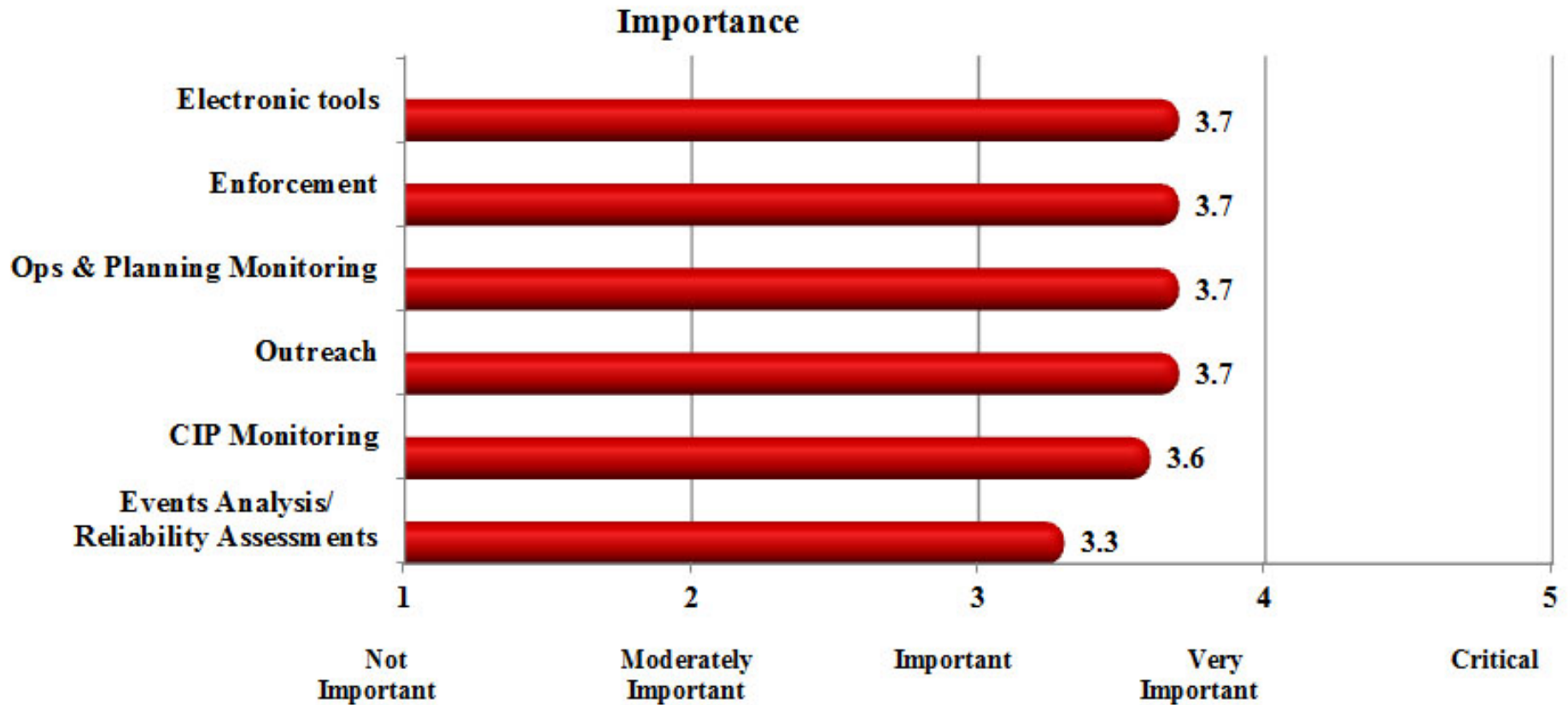
- All averages in *meets expectations* range between 3.3 and 3.6

Customer Service/Responsiveness



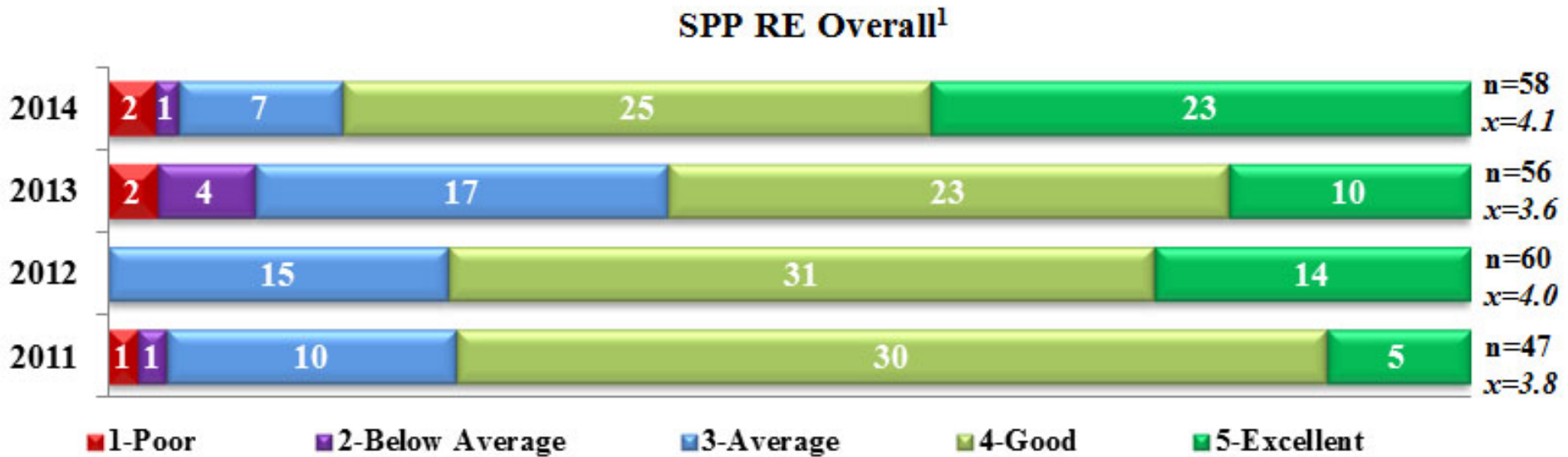
- All averages between *good* and *excellent*, from 4.1 to 4.5

Program Importance



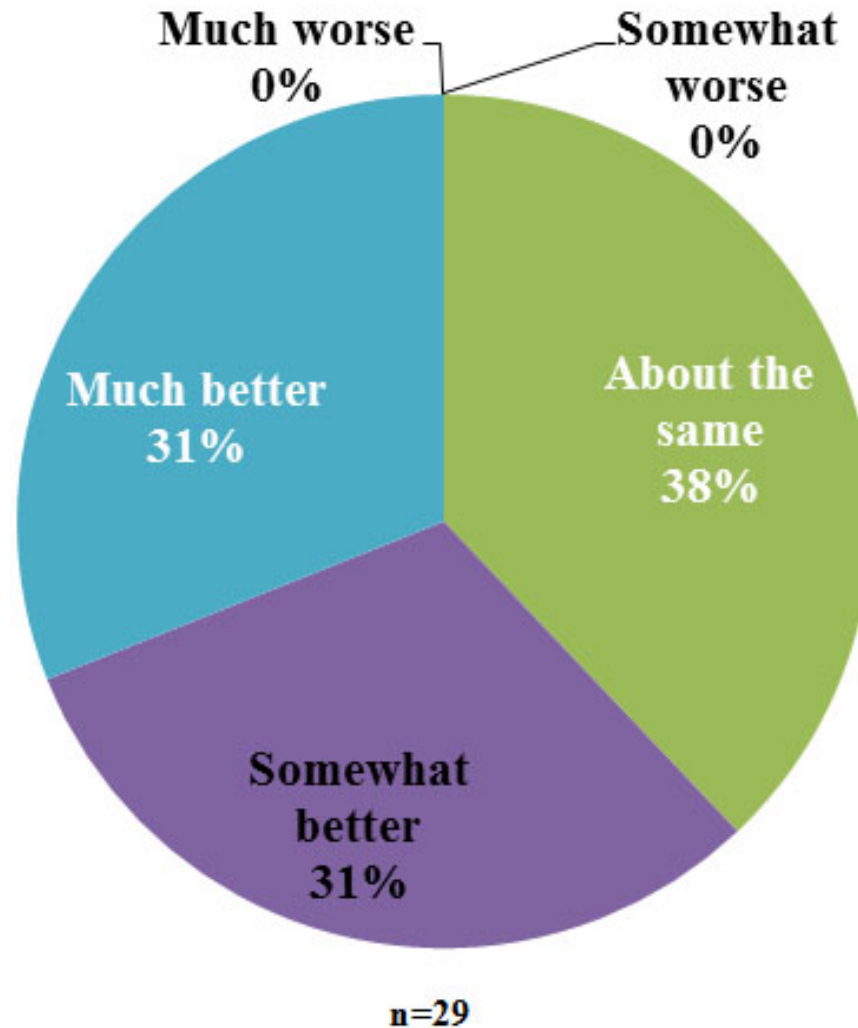
- Averages between 3.3 and 3.7 - *important and very important*

Overall Satisfaction Year-By-Year



- Overall score of 4.1 is just above *good*
- Highest score in four years

Interaction with other Regional Entities



- 38% (29) interact with other Regional Entities

Qualitative Analysis

- **10 Dissatisfied** comments related to:
 - Better multi-regional collaboration
 - Dissatisfaction with being in the CMEP
 - Desire to allow audit observers from other Registered Entities
 - Need for more information about changes at NERC level
- **16 Satisfied** comments regarding staff's:
 - General excellence
 - Proactive outreach efforts
 - Responsiveness
 - Professionalism

Next Steps

- **SPP RE management and staff will discuss survey results**
- **Management and staff will develop action plan to address concerns**



2014 SPP RE Stakeholder Satisfaction Survey Report

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Executive Summary

SPP RE strives to continuously improve its performance of its NERC-delegated functions. Each year SPP RE asks its Registered Entities to provide anonymous input on the organization’s programs and customer service to stakeholders.

SPP RE issued the 2014 Stakeholder Satisfaction Survey on September 18, 2014 to the 123 Primary Compliance Contacts who are registered in SPP RE’s compliance database (webCDMS). The survey had a 62% response rate (76 respondents), up from 57% in 2013. Of the 76 respondents, 16 opted out of the survey because they do not work with SPP RE enough to provide input.

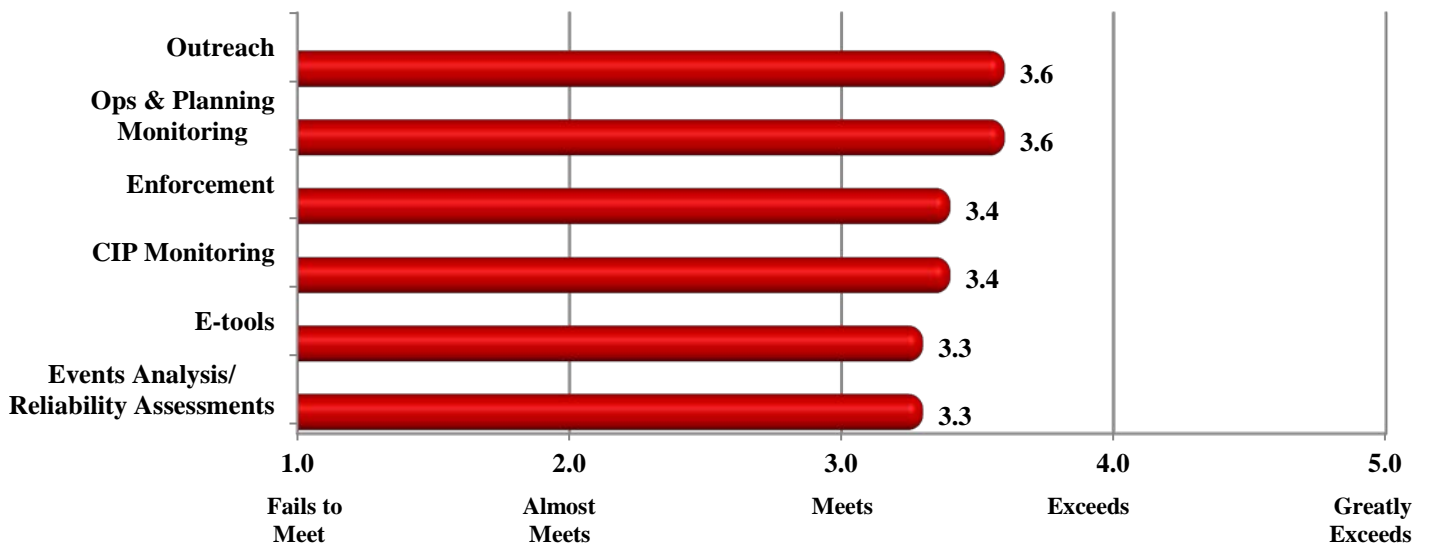
Respondents were asked to assess six SPP RE programs on their importance, how well they meet expectations, and customer service/responsiveness. Stakeholders were also asked to assess SPP RE’s performance in relation to other Regional Entities, to rate overall performance, and to provide qualitative comments.

On a scale of 1-5 in which 5 represents the most favorable score, average ratings throughout the survey were between 3.3 and 4.5.

Of the 30 respondents who interact with other Regional Entities, none rated SPP much worse or somewhat worse, 38% rated SPP RE about the same, 31% rated SPP RE somewhat better, and 31% rated SPP RE much better.

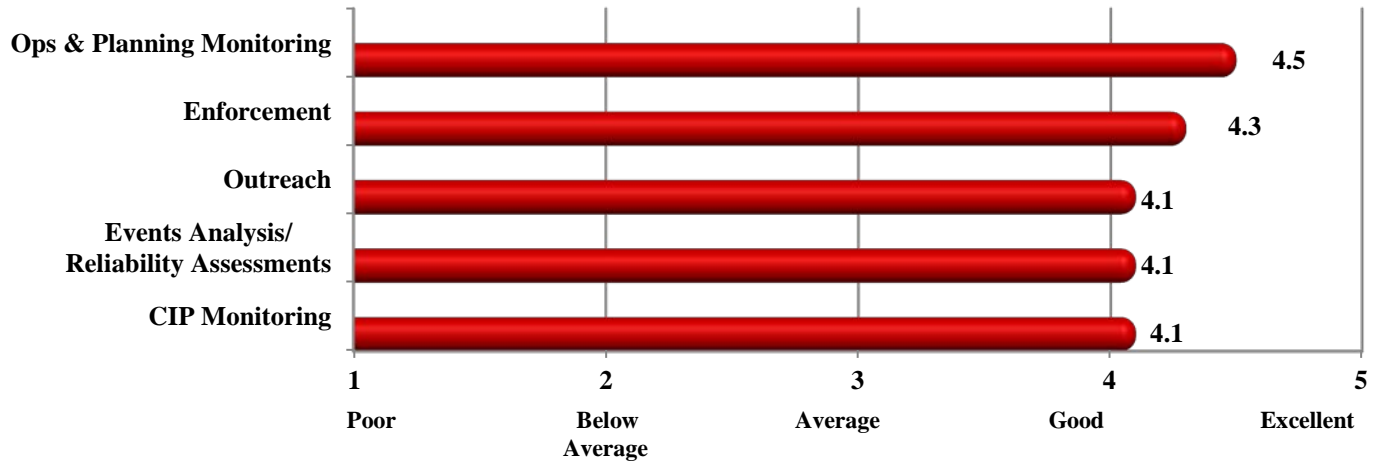
When asked how well SPP RE’s programs and services meet expectations, respondents rated all with average scores in the *meets expectations* range between 3.3 and 3.6.

How well program meets expectations



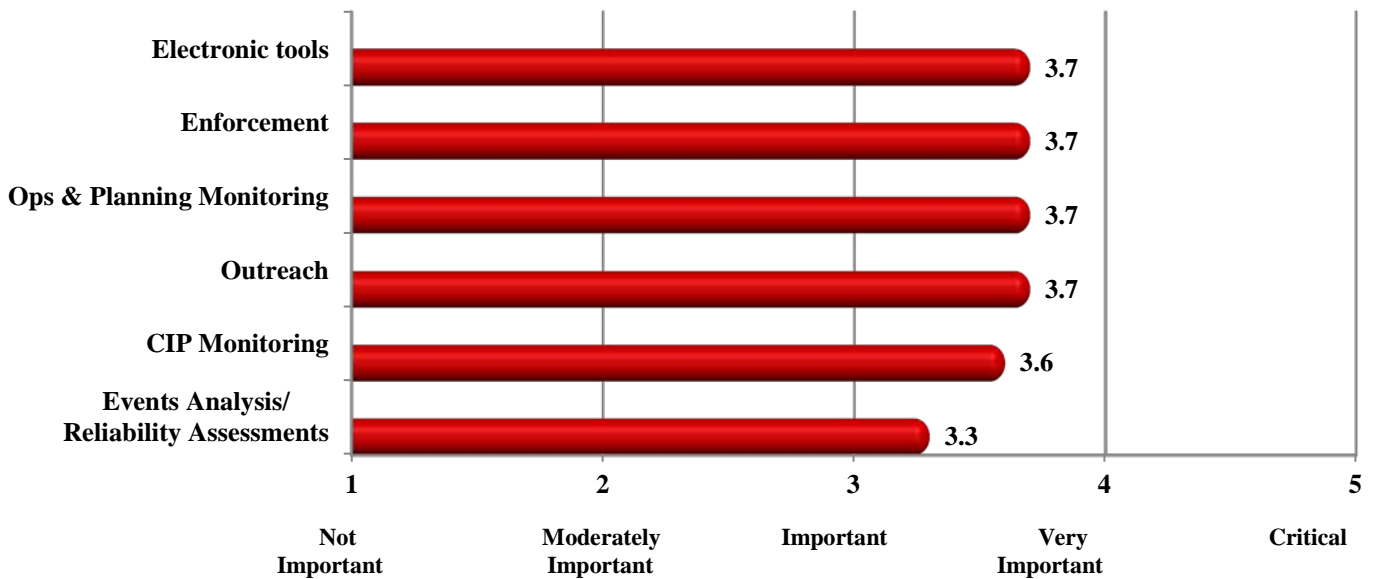
When asked to rate employees' customer service ability or programs' responsiveness to needs, respondents rated all with average scores between *good* and *excellent*, from 4.1 to 4.5.

Customer Service/Responsiveness

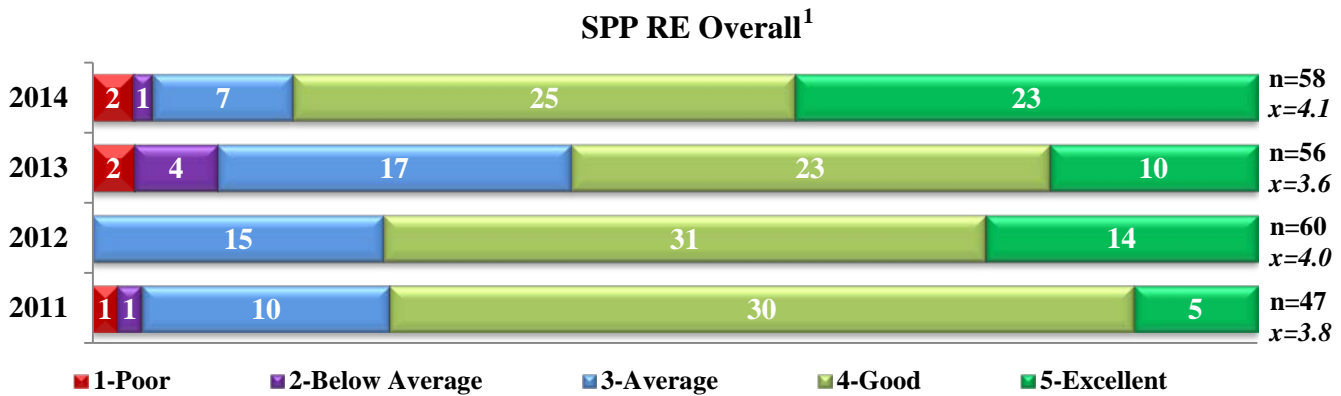


Respondents rated the importance of SPP RE's programs and services between *important* and *very important*, with average scores between 3.3 and 3.7.

Importance



The 2014 overall satisfaction rating of 4.1 is the highest rating in four years.



Respondents could answer open-ended questions regarding each program and SPP RE in general. There were 10 unfavorable comments related to multi-regional collaboration, dissatisfaction with being in the CMEP, the desire to allow audit observers from other Registered Entities, and the need for more information about changes at the NERC level.

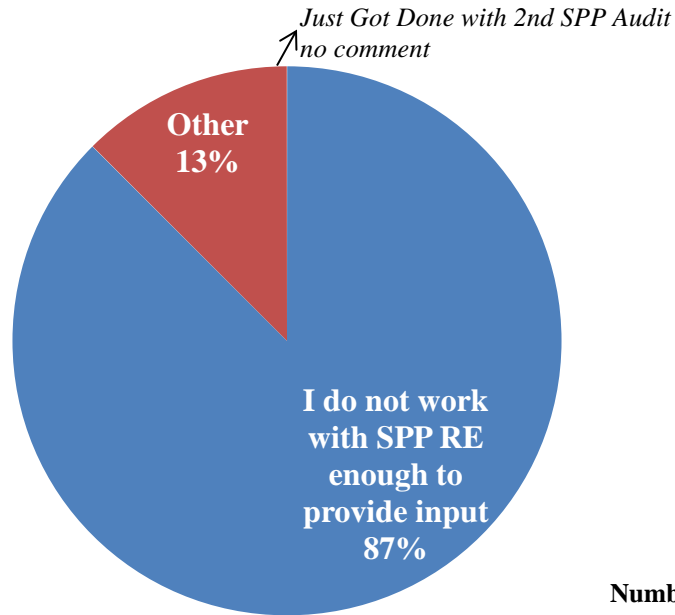
Sixteen positive comments related to staff’s general excellence, proactive outreach efforts, responsiveness, and professionalism.

When asked what specific things staff could do to exceed expectations, respondents left 12 comments including improving multi-regional consistency, moving faster with NERC’s Reliability Assurance Initiative, and having a more transparent approach to compliance.

¹ Stacked bar charts throughout this report indicate the number of respondents in each category, not the percentage. “N” represents the number of people who responded to that question, while “x” denotes the average response.

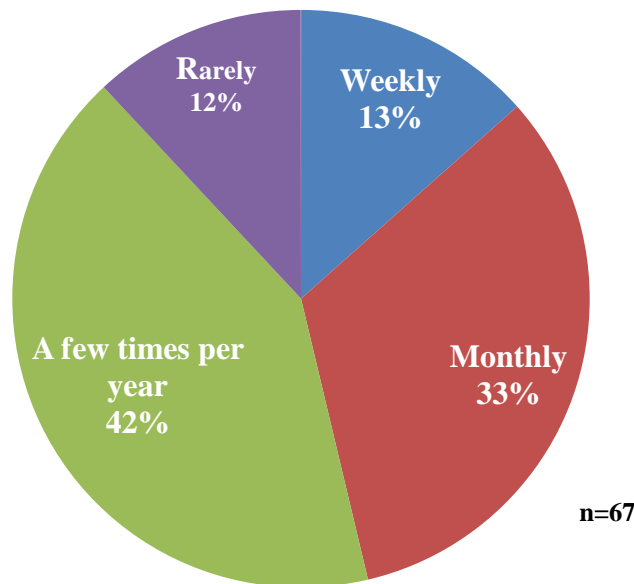
Demographics

I choose not to take this survey because:



Number reporting (n) =16

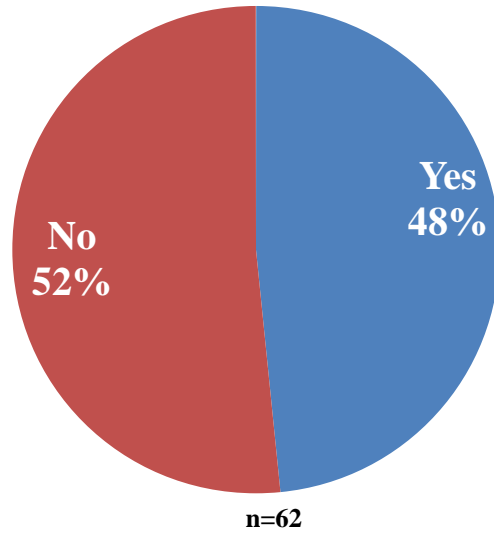
How often do you interact with SPP RE?



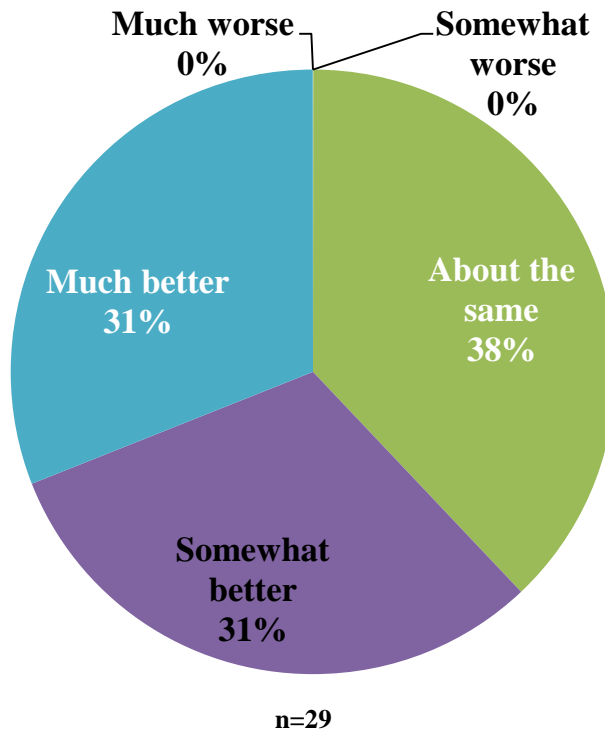
n=67

Interaction with other Regional Entities

Do you interact with other Regional Entities?

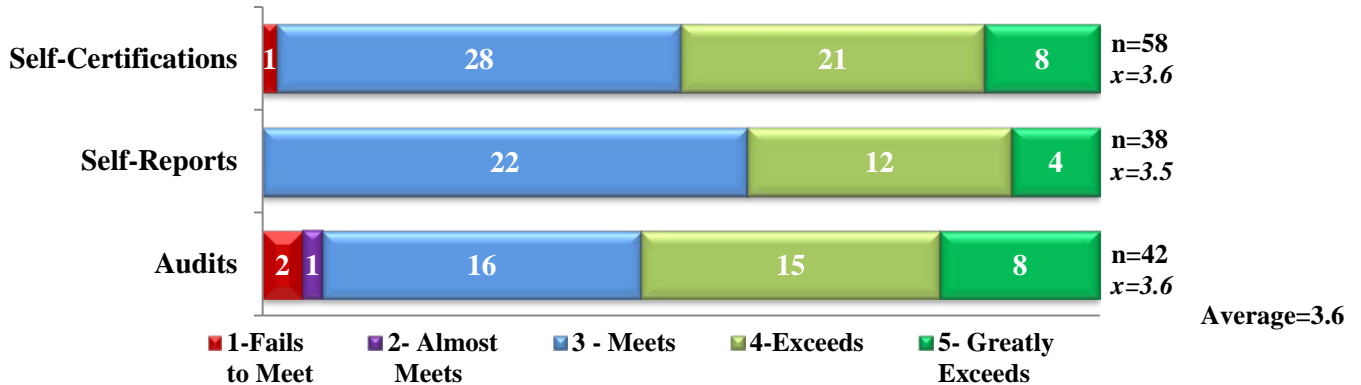


If "yes", how does SPP RE compare with the Regional Entities with which you interact most often?

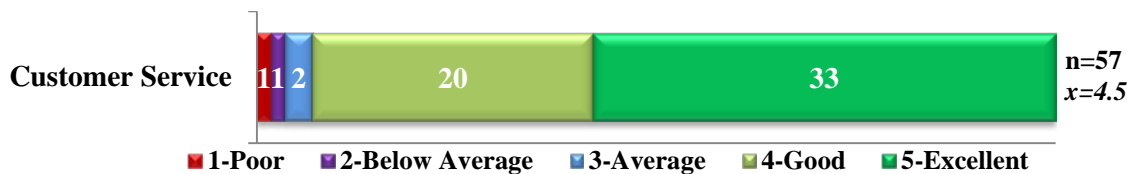


Operations and Planning Compliance Monitoring

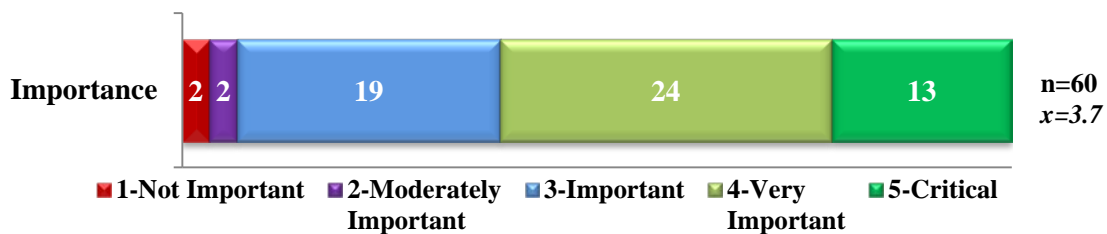
How well does our Operations & Planning (693) program meet your expectations?



Please rate the Operations & Planning (693) staff's customer service ability (responsiveness, professionalism, problem solving, and communication skills):



How important is our Operations & Planning (693) program to you or your organization?



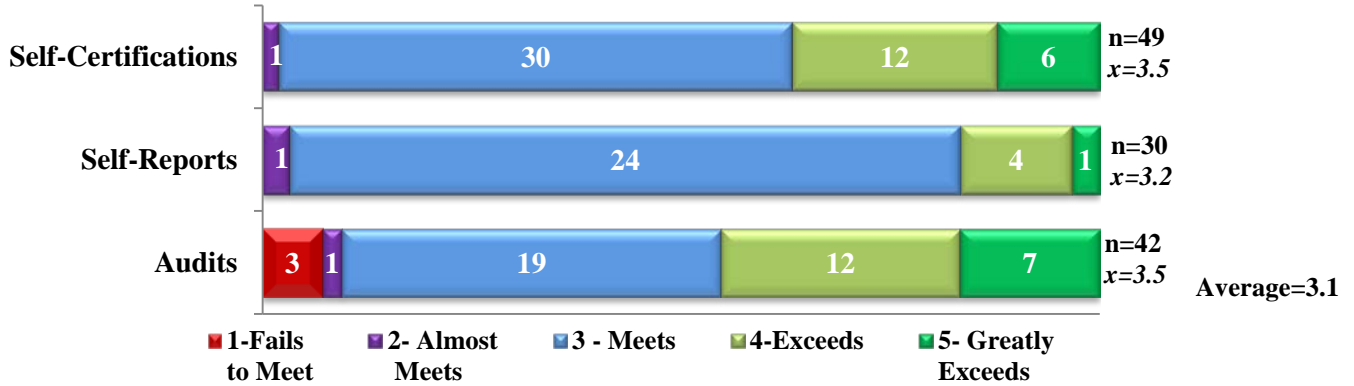
Please share your suggestions for improving our Traditional (693) Compliance Monitoring program:

- In the last 12 months we are gone through a self report and audit.The SPP RE was great to work with!
- None at this time
- 1. Audit to the Standards. 2. Quality check your communications. (Make some attempt to get things right the first time, not the third or fourth try). 3. Stop trying to justify your existence by fabricating violations.
- Get us out of the System!
- not experienced enough to respond

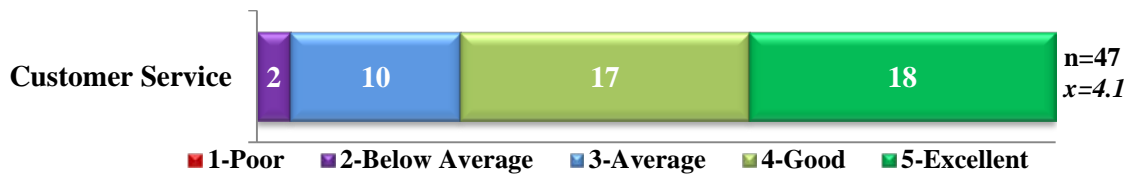
- Keep up the good work. Your educational efforts help us do two things. First it helps us keep our "head in the game" by lessons learned, future events, and secondly the resource is critical to market participants.
- Most recent Audit interaction with O&P Group was positive and productive. Lead was proactive and open to suggestions. Focused on the more impactful reliability issues.
- Improved communications
- Possibly provide more indication of what the audit plan is going to be mid-year instead of waiting until early fourth quarter. Entities that have first quarter audits do not have as much lead time as the entities that are in third and fourth quarters.
- It would be helpful for the SPP RE to adopt the ISME program from SERC to allow Industry Subject Matter Experts the opportunity to participate in 693 audits.
- NA we are a PSE Only in SPP RE
- The 693 Compliance process has been reasonably stable and organized from audit to audit, with questions/interpretations that arise in the Standard drafting process fairly well answered for the entities.

Critical Infrastructure Protection (CIP) Compliance Monitoring

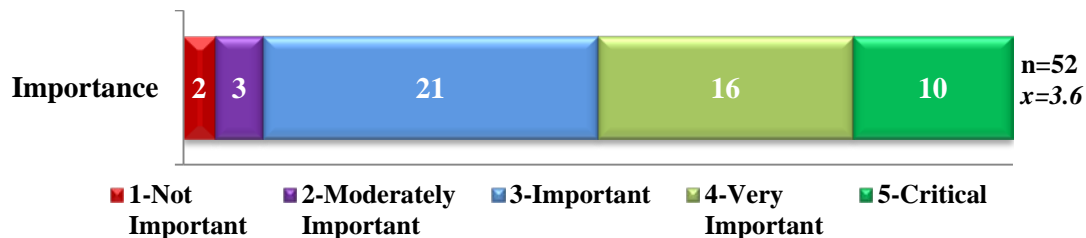
How well does our CIP program meet your expectations?



Please rate the CIP staff's customer service ability (responsiveness, professionalism, problem solving, and communication skills):



How important is our CIP program to you or your organization?



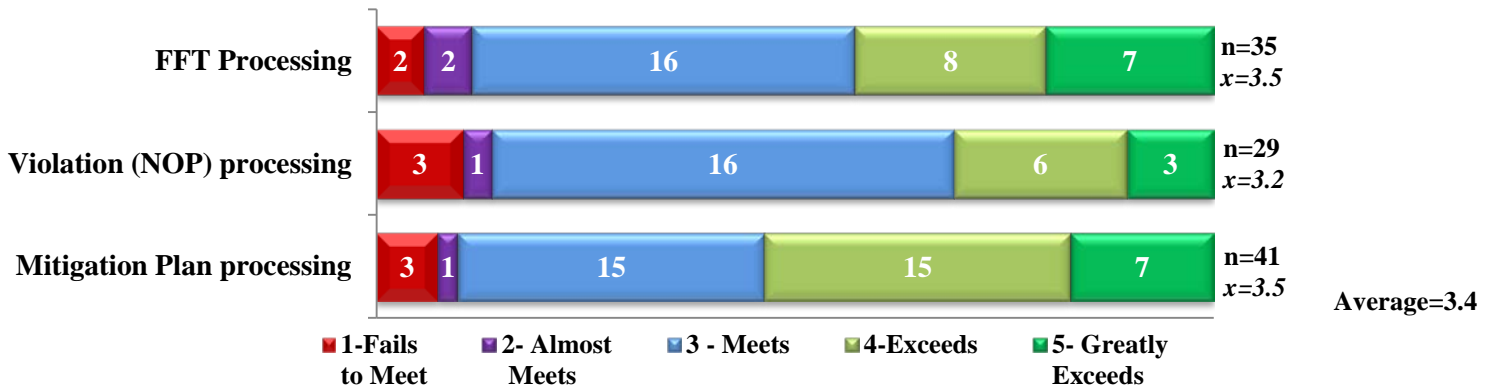
Please share your suggestions for improving our CIP program:

- They are doing a great job! I have no suggestions for improvement.
- We are a d.p. l.s.e. that receives from grid no transmissions at all WHY? do We Need to be in the system at all!!!!!! to Even be in system!!!!
- Words of encouragement: Keep up the good work. Your educational efforts help us do two things. First it helps us keep our "head in the game" by lessons learned, future events, and secondly the resource is critical to market participants.

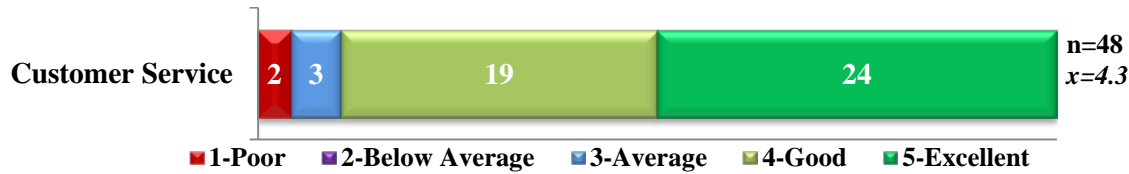
- CIP V5 outreach and collaboration activities have been positive. There will need to be much more in 2015. SPP CIP needs to transition to focus on the impactful reliability and security issues much like the O&P side. SPP CIP needs to be careful not to let the RAI and Internal Controls evaluation process get out of control. If that happens, SPP entities will back away from RAI.
- Some CIP SPP compliance personnel are better than others. Others make up their mind and are very reluctant to change their opinion no matter what information is presented. Suggestion - Be more open to listen to others.
- The SPP RE CIP auditors should focus on enforcing the NERC's audit approach and interpretation while following NERC's RoP, rather than the auditors imposing their own interpretation and audit approach. This leads to situations where entities are not able to benchmark their programs.
- It would be helpful for the SPP RE to adopt the ISME program from SERC to allow Industry Subject Matter Experts the opportunity to participate in CIP audits.
- NA we are a PSE Only in SPP RE
- I rated the CIP Compliance staff customer service ability as "average" because the question does not lend itself to the components of audits versus outreach and approachability. The CIP Compliance team members are quite responsive in helping with approaches and problems; on the other hand audits are still quite uneven in the judgements made, not only from audit to audit, but even within a single audit event. These events should not be guessing games.

Enforcement

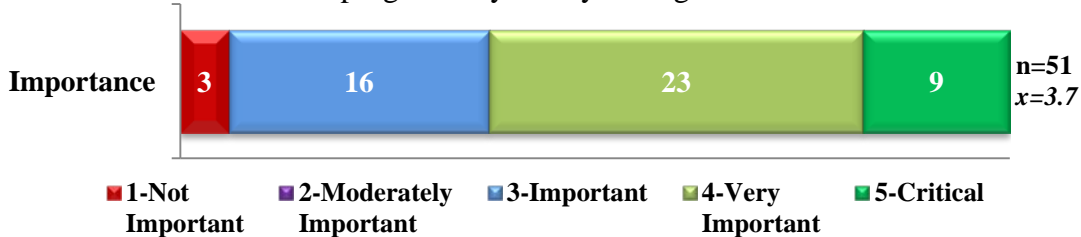
How well does our Enforcement program meet your expectations?



Please rate the Enforcement staff's customer service ability (responsiveness, professionalism, problem solving, and communication skills):



How important is our Enforcement program to you or your organization?

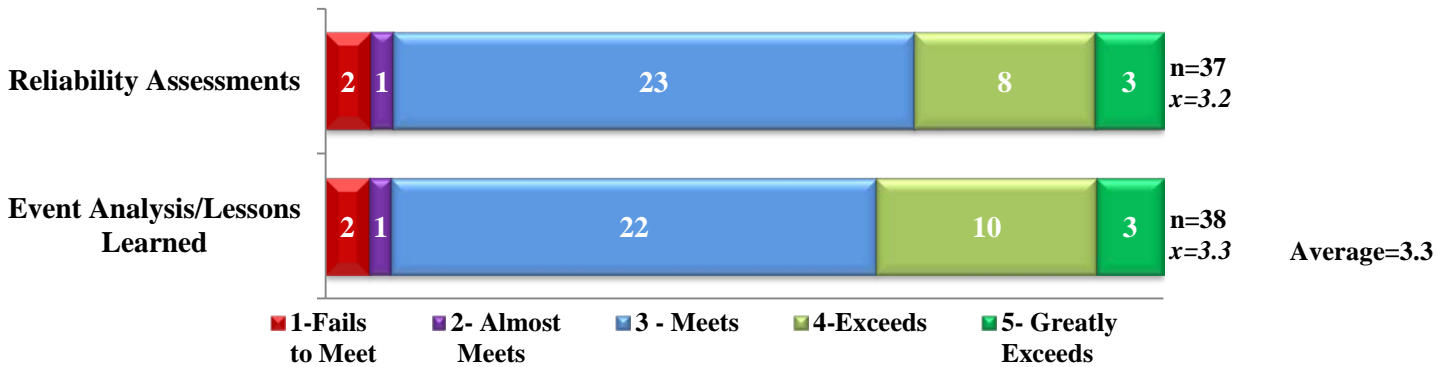


Please share your suggestions for improving our Enforcement program:

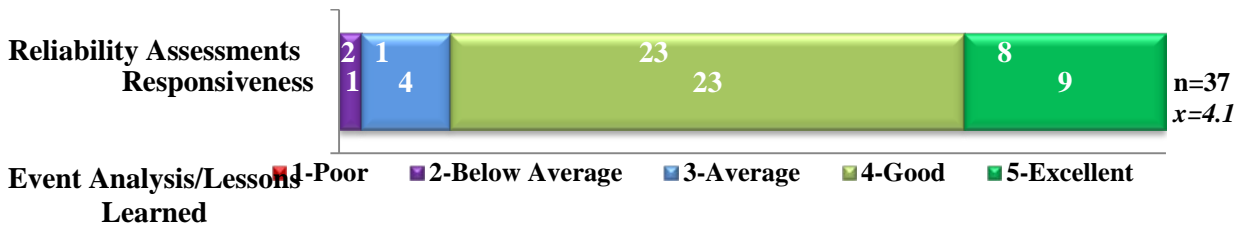
- The enforcement personal have made themselves available to assist when possible and are very good to work with!
- 1. Stop covering for the Auditors mistakes. Dismiss NOPVs without merit. 2. Audit to the Standards. 3. Quality check your communications. (Make some attempt to get things right the first time, not the third or fourth try). 4. Stop trying to justify your existence by fabricating violations.
- same as above!!
- Enforcement staff is very knowledgeable and professional. Good to work with.
- Focus on timeliness and promptness addressing violations and mitigation plans.
- More separation between audit and enforcement staff.
- The Enforcement staff is quite responsive and communicate well. They are somewhat limited by the poor rollout of programs, e.g. RAI, by NERC, which leave many questions unanswered.

Event Analysis/Lessons Learned and Reliability Assessments

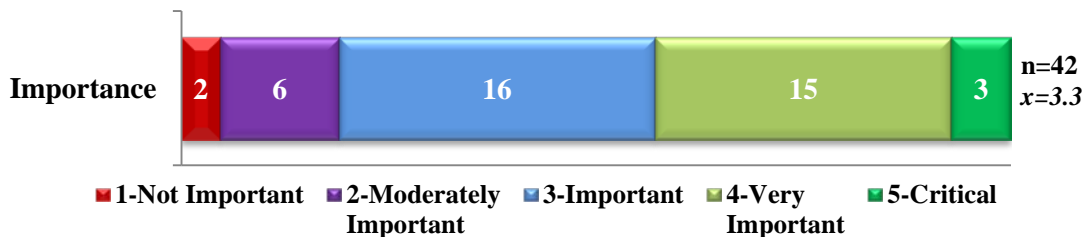
How well do our Event Analysis/Lessons Learned and Reliability Assessment programs meet your expectations?



Please rate our Event Analysis/Lessons Learned and Reliability Assessment staff's customer service ability (responsiveness, professionalism, problem solving, and communication skills):



How important are our Event Analysis/Lessons Learned and Reliability Assessment programs to you or your organization?

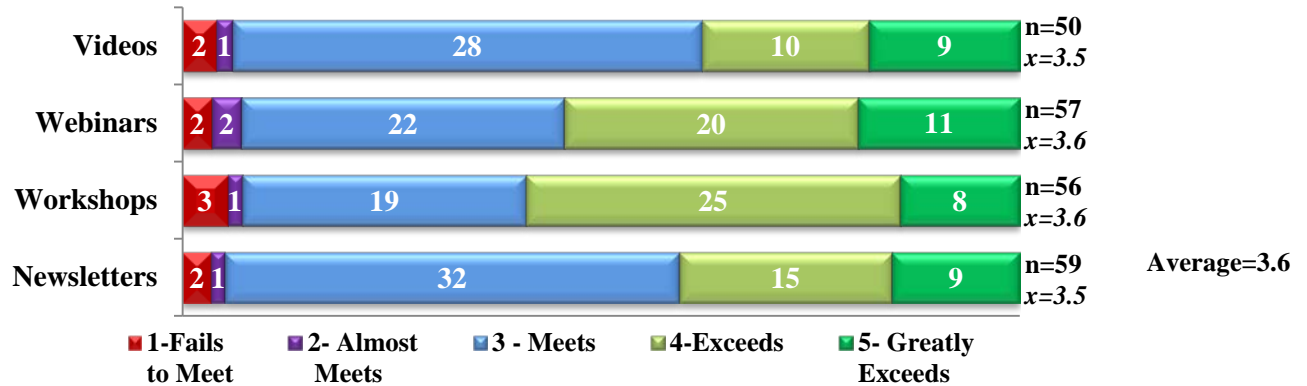


Please share your suggestions for improving our Event Analysis/Lessons Learned and Reliability Assessment programs:

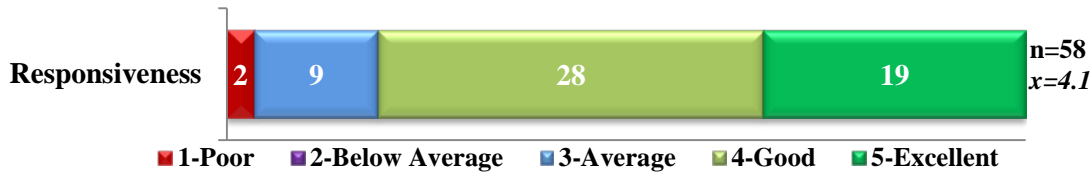
- Got one IT cyber nut That has no Concept as to what little guys do. He was hell bent on getting us a fine if it wasn't for an educated attorney on SPP staff We would have been up a creek with gators and no boat!
- haven't had any events to analyze

Outreach

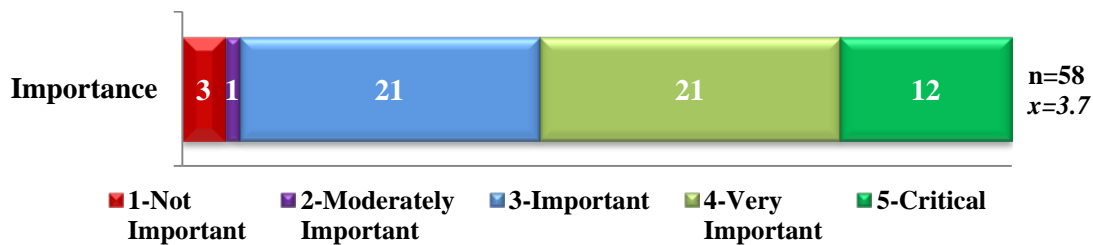
How well does our Outreach program meet your expectations?



Please rate our Outreach program's responsiveness to your needs:



How important is our Outreach program to you or your organization?



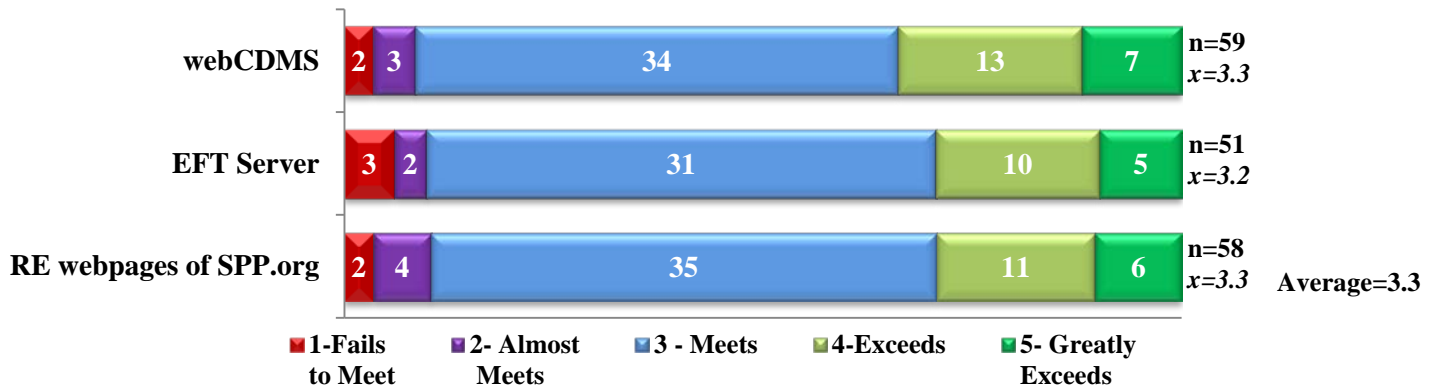
Please share your suggestions for improving our Outreach program:

- we don't need any of this!!!
- Workshops have become sort of "ho-hum" with the many member entity presentations that are specific to their own systems or company. Simply put, if we wanted to know about how an entity does something we can just simply pick up the phone and call them. However what we would like to see with all the changes at NERC forthcoming is how is the RE going embrace changing NERC programs such as the changing of RAI and the RE's Implementation Plans, What does the RE expect in the Internal Controls Evaluation (ICE) of an entity? The RE's Regional Implimintation Plan in regards to risk assessment? The Inherent Risk Assessment (IRA) of an entity. These are all large topics which should be covered now but I do not believe that the Fall 2014 workshop has any of these topics listed. I would like to see the RE go back to more RE material being presented as to expectations of what's to come....

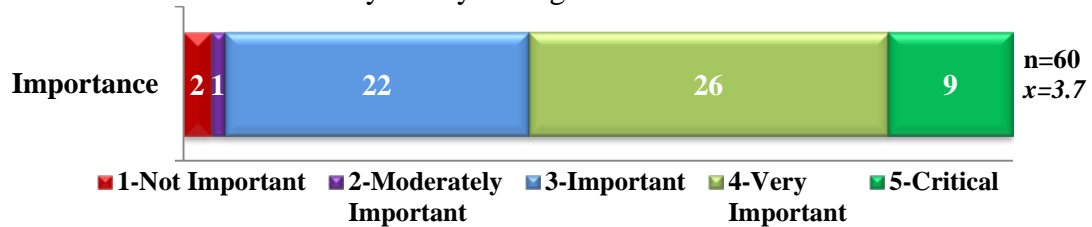
- More information about how to comply with standards. Less information about best practices regarding security and reliability.
- Especially when compared to other Regional Entities in the neighborhood, the SPP RE exceeds expectations regarding outreach, working with registered entities, and defining expectations for compliance. Some of the compliance expectations can be debated of course, but nonetheless, compliance obligations for the footprint are being defined.
- Many communications are too elemental and do not answer some obvious questions about programs/processes. that is understandable for communications at the beginning of a program, but there should be follow-up once the entities questions are known.

Electronic Tools

How well do our electronic tools meet your expectations?



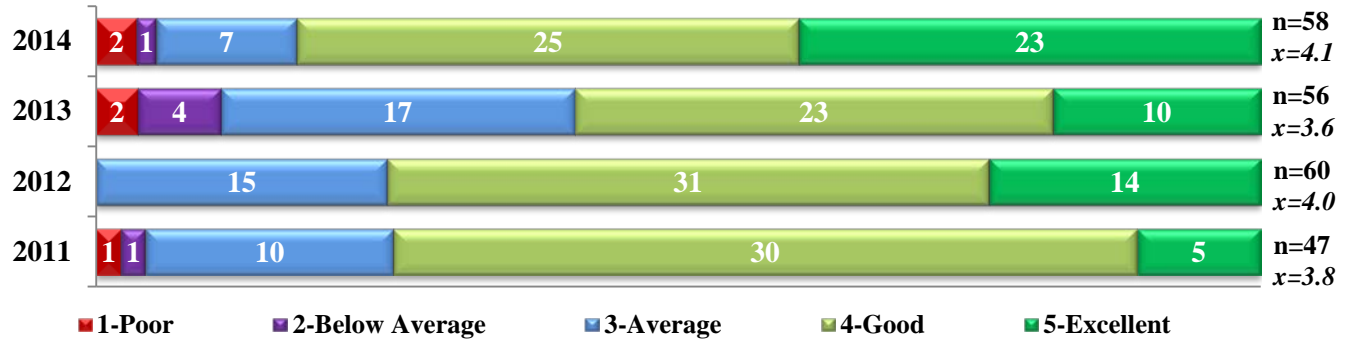
How important are our electronic tools to you or your organization?



Please share your suggestions for improving our electronic tools:

- Access related issues and system performance take an enormous amount of time.
- As a new user to the webCDMS system in the past 3 months, I have struggled to find documentation to assist me in the process of completing quarterly reporting and other submittals. Contacting the RE Staff solved my problem, but I believe better online help tools are needed.
- Use WebCDMS. Stop creating a new submission process for every Standard.
- For the size organization we are do not need this!!!!
- I understand the benefit of the RAPA Misoperations CDMS feature. However, as it's currently designed, it adds a lot of work to our process. We have all the data in a spreadsheet then have to copy/paste it line-by-line into CDMS. An xml or csv feature would save us a lot of time.
- CDMS probably most important.
- Tools should be better designed for user friendliness. For example, the Misoperations reporting tool is unnecessarily tedious and almost unusable.

Overall Performance 2011-2014



The 2014 overall satisfaction rating of 4.1 was the highest in four years.

Qualitative - Dissatisfaction

Please share other comments regarding your dissatisfaction with SPP RE

- Do not require any DPs LSE that use little Megawatts that are not even transmitting on grid with small number of customers even have to be in the system at all.
- Please allow entities the ability to invite other entities to their on-site audits. Although the SPP RE points to the NERC ROP as the reason for ending this practice, we believe it is up to the SPP RE if this is allowed. This would allow entities to learn from each other and ultimately produce a more reliable BES. If the SPP RE continues to believe the NERC ROP block this practice, then the SPP RE should work with the entities and NERC to change the rule.
- The main area of dissatisfaction is not SPP RE directly, but with the collaboration between entities. We are a multi-region entity and the difference between regions causes issues ranging from minor confusion to true frustrations. If SPP RE could better collaborate with the other REs and drive for consistency, it would help us to free time devoted to dealing with inconsistencies and provide better focus on reliability issues.
- Have Ron C and staff provide more of "whats to come" with the changes happening and NERC.
- Have not been registered long to have had any dissatisfying experiences
- Seeming lack of participation, engagement and understanding of the NERC RAI. Shift in position on Entity Observers at Audits. Pro's outweigh Con's for all involved on this one. Appearance is that SPP RE is unwilling to have open transparent dialog on issues. There is an Entity involvement option currently being used in SERC that should be considered in SPP.
- CIP compliance leadership needs improvement.
- See above suggestions above. The SPP RE needs to continue to improve the process of resolving violations and communicating with the entities.
- Webinars about how Kevin Perry believes NERC will implement RAI 8 months before the RAI documentation has even been created is not helpful and creates difficulties within the member companies.
- N/A
- CIP audits (interpretations of Standards) need improvement.

Qualitative - Satisfaction

Please share other comments regarding your satisfaction with SPP RE:

- Have gone through a self report and 693 audit in the last 12 months. The SPP RE was excellent to work with.
- Jeff Rooker, Mike Hughes and Daniel Haney have been excellent to work with. They take the time to really listen to the circumstances of your individual situation. They are reasonable and fair and will to share info in a non-threatening way to help educate you on the expectations of compliance so that I can make it right moving forward.
- Outreach videos have been crucial to bringing me up to speed with a number of topics. Staff is always very cordial when contacted, either by phone or in person at the RE Workshop.
- The head manager and upper management staff that have been their last 5 Years are Fantastic!!! the some new kids on staff have no clue about real world.
- SPP Audit staff have been outstanding to deal with regarding the upcoming November CIP audit. They've demonstrated responsiveness to the questions we've asked, they've done a good job of shielding us from having to interface with multiple REs, and they've been flexible with regard to the requests we've made. Fundamentally, they've been very professional throughout the whole engagement. We continue to value the support we receive from SPP regarding compliance guidance – including, but not limited to, the multiple meetings / workshops / webinars SPP has facilitated to help entities get ready for CIP Version 5.
- Audit staff are generally good people to work with.
- Very prompt responses to any questions we have had
- I appreciate the professionalism of the group. I will always get an answer and I can see your point of view.
- SPP staff have always been responsive to our questions or needs. They are very professional as well.
- O&P Audit interaction. CIP V5 outreach and collaboration. Enforcement staff interaction.
- 693 compliance staff very good to work with. Thomas Teafatiller and Jeff Rooker stand out.
- There is some positive change in the SPP RE organization; their more collaborative approach to improving overall reliability and customer service.
- SPP RE employees seem to have the best of intentions.
- N/A
- Being proactive in getting information out to the members.

- I found the auditors worked with our SME's to explain and clarify questions they had. The auditors went above my expectations to make sure the SME's understood what they were looking for in the evidence they were reviewing. Daniel also went above and beyond when he called and explained what evidence we were missing. Once he provided additional information of what they were seeking our facility was able to provide them the correct evidence. Daniel and Mike were polite and never got frustrated with our questions/inquiries. I really enjoyed working with them and their team.
- Outreach by SPP in general has been excellent and effective.

Qualitative - Improvement

What specific things could we do to EXCEED expectations?

- Their willingness to go the extra distance to be helpful.
- I expect to be able to view expectations at higher levels than I have marked within the next 6 months to a year. Being new to the position, I have not had enough exposure to the RE Staff to really be able to develop accurate expectations. I look forward to future opportunities to interact with the RE Staff.
- I think that the Generator Owner Operator registered functions needs to have more focus attention during the conferences.
- Listen to the little guy that has been doing this since 1973 Has Taught electrical Engineering at 2 Highly recognized University's. and Has worked with FEMA and Homeland Defense and was told I needed to be an engineer to understand how the system works! LOL.
- The most important aspect is for SPP and the other regions to be consistent about messaging and processes for Compliance, Monitoring and Enforcement as we all participate in the RAI program.
- See "Dissatisfaction" response.
- Start up a program similar to SERC's ISME program.
- Courtesy shown during any interactions thus far
- Incorporate a more open, transparent and collaborative approach to compliance. The RE and Entities share the same goals of reliability and security.
- Move faster into the RAI and to provide some level of consistency and clarity to the audit/compliance process to help reduce the burden of the processes on the registered entities.
- Focus on the mission of the RE as a part of the ERO.
- Outreach is comparatively good.

2014 Event Report

Alan Wahlstrom
Lead Engineer

October 27, 2014

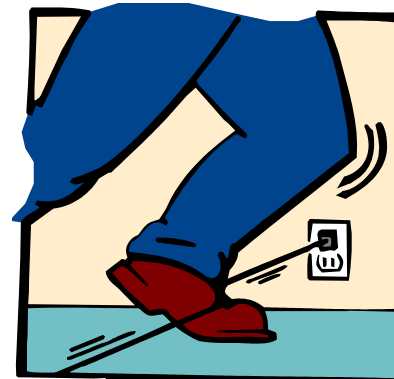


SPP Events for 2014

- **20 total events, 9 Category 1 Events, 1 Category 2 events analyzed via NERC's Event Analysis process**

SPP Regional Events (April 1st – June 30th)

- 1 Category 1h. Event. Loss of monitoring or control at a control center.
- 1 Category 2c. Event. Voltage excursions equal to or greater than 10 percent lasting more than 15 continuous minutes due to a BPS emergency.



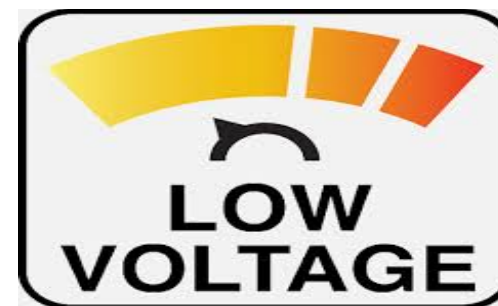
Loss of Real Time Contingency Analysis

- **Modeling Error**
 - RTCA unavailable 53 minutes
 - Opening a 345 KV line triggered the loss of RTCA
 - Breaker status on the 345 KV line was not used by the State Estimator



Low Voltage

- **345/138 KV transformer tripped and locked out due to a tertiary ground fault.**
 - **138 KV system was observed at 124.2 KV**
 - **Low voltage effected adjacent utility**
 - **50 MW shed in adjacent utility**
 - **Event lasted 26 min**



NERC LESSONS LEARNED

Load-Shedding Plans for Localized Events

LL20140801

- 345/115 KV transformer and Power plant trip causing low voltage.
- Voltage 86percent of nominal
- Combustion turbines unable to start
- Operators implemented load shedding plan



Load-Shedding Plans for Localized Events

LL20140801

The following lessons learned were derived from the event:

- While generation capacity deficiency load-shedding plans are effective for reducing large amounts of load over a large area, system operators should also have load-shedding procedures that give them the flexibility to solve small local area voltage or line-loading problems.
- Utilities should provide training and guidance to system operators on load-shedding plans.

Loss of EMS Monitoring and Control Functionality for More Than 30 Minutes LL20140901

- System failure triggered by an insufficient amount of disc storage for the Oracle Recovery log.
- Logs were being backed up to the Application server instead of the intended “redo logs”
- Failover process timed out causing server to be brought down



Loss of EMS Monitoring and Control Functionality for More Than 30 Minutes LL20140901

- **Lesson Learned**
 - The EMS was generating event messages related to the RDBMS going online and offline well in advance of the system failing. Now that it is known that this condition has the potential to cause a total system failure, maintenance staff has increased the alarm priority to the highest level and can implement automated controls that shut down Oracle in an attempt to prevent this intermittent connection condition..

Redundant Network Interface Cards on EMS Systems LL20140902

- A network interruption occurred that caused the primary and backup energy management system (EMS) to be unable to communicate.
- Faulty network interface card caused communication between backup and primary systems to fail



Redundant Network Interface Cards on EMS Systems LL20140902

- **Lessons Learned**
 - Redundant network interface cards on the primary and backup EMS systems may have prevented the incident.

Loss of EMS/Dispatch Workstation Functionality due to NTP Time Synchronization Device Misconfiguration LL20140903

- An entity lost its EMS/Dispatch workstation functionality due to a time synchronization device
 - Three redundant servers separated from time source then reconnected without time source causing failover.
 - EMS staff reverted to original time sync to correct problem but caused time sync issue with dispatch machine
 -

Loss of EMS/Dispatch Workstation Functionality due to NTP Time Synchronization Device Misconfiguration LL20140903

- **Lesson Learned**
 - **Connecting and disconnecting EMS/SCADA servers from their networks and time sources can lead to erratic behavior and possible disruptions of availability. Procedures should be in place that define a prescribed power down and power up process that includes validation of time upon reconnecting to the EMS networks.**

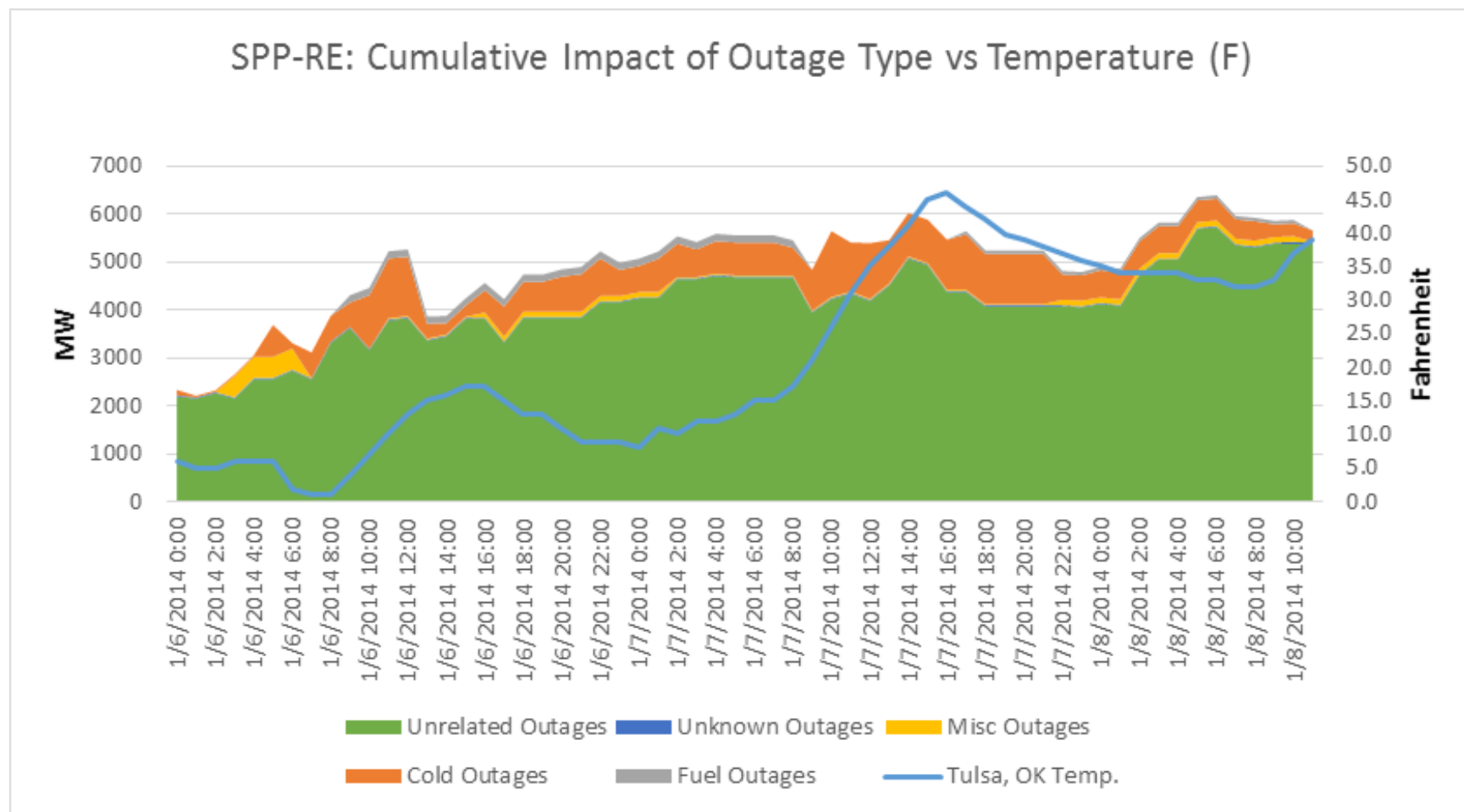


POLAR VORTEX

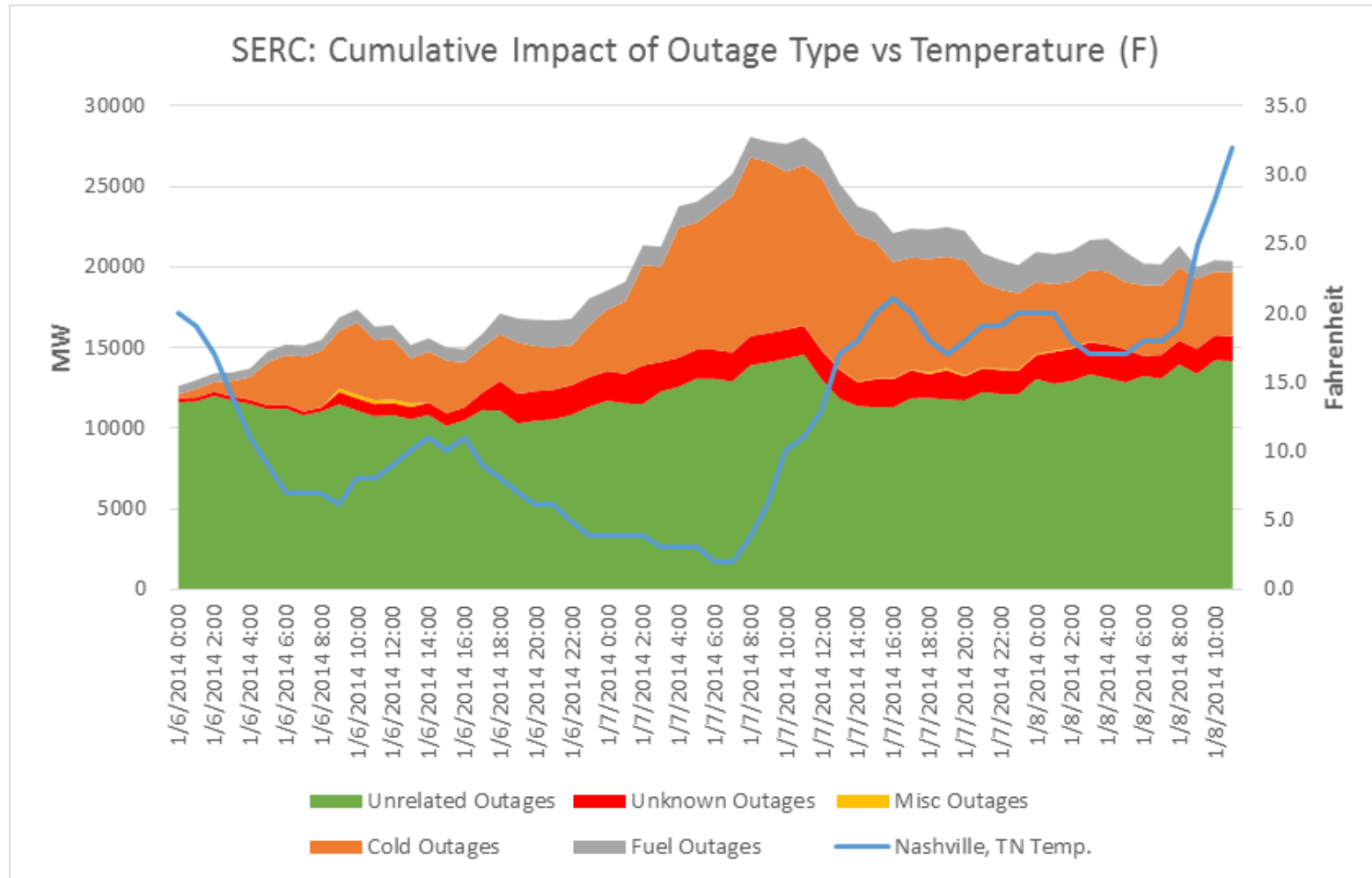
NERC Polar Vortex Report

- **Excluding Florida SPP experienced the lowest number of cold impacted outages.**
 - **150 MW of Fuel outages**
 - **1200 MW cold weather directly impacted outages**
 - **41 hours less than 700 MW of cold impacted outages**

Impact of Outage Type SPP



Impact of Outage Type SERC



Links

- SPP RE Event Analysis Webpage

<http://www.spp.org/section.asp?pageID=142>

- Event Analysis Process Documents

[http://www.nerc.com/comm/OC/Pages/Event-Analysis-Subcommittee-\(EAS\)-2013.aspx](http://www.nerc.com/comm/OC/Pages/Event-Analysis-Subcommittee-(EAS)-2013.aspx)

- SPP Lessons Learned

<http://www.spp.org/section.asp?group=2243&pageID=27>

- NERC Lessons Learned

<http://www.nerc.com/pa/rrm/ea/Pages/Lessons-Learned.aspx>

2015 Implementation Plan

October 27, 2014

Ron Ciesiel SPP RE General Manager



2015 Implementation Plan

- **NERC IP Template for all regions**
- **SPP RE's plan:**
 - **Highlights any changes to SPP RE (staffing levels, new policies or new tools)**
 - **Identifies initiatives and activities (Pilot programs or evaluation of Registered Entity's internal controls)**
 - **Covers Registered Entity Assessment process**
 - **Identifies regional risks and Reliability Standard/Requirements**
 - **Audit schedule**
 - **Compliance Outreach**

**ERO Reliability
Assessment**

**Regional
Reliability
Assessment**

**Registered Entity
Assessment/
Audit Scope**

ERO RELIABILITY ASSESSMENT

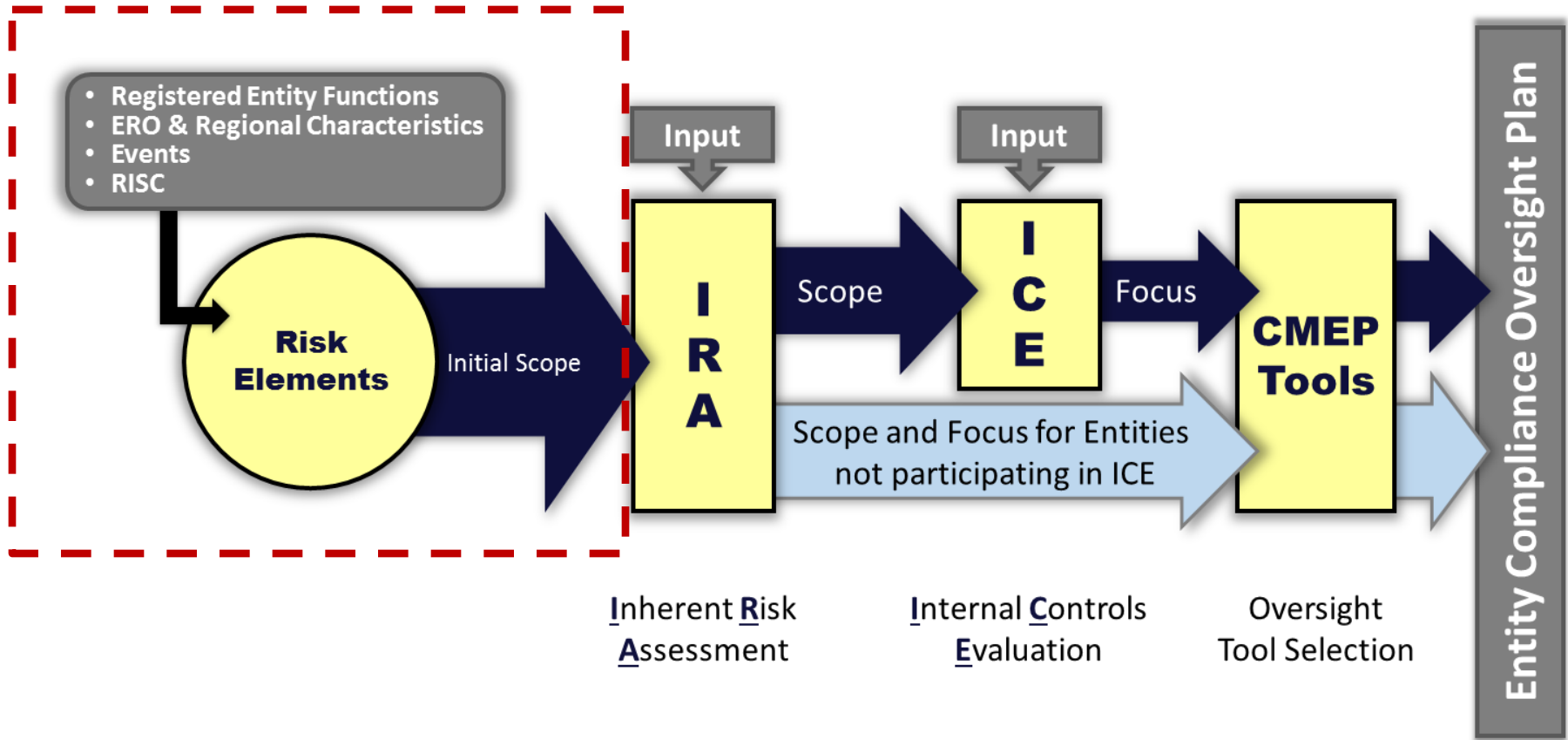
Deployment of Risk Based Compliance Oversight

- In 2015, risk-based compliance oversight framework takes the place of Actively Monitored List (AML)
- New Reliability Assurance Initiative (RAI) transformed the CMEP
 - To one that is forward-looking
 - Focuses on high reliability risk areas to the BPS
 - Reduces the administrative burden on the Registered Entities
 - Risk-informed assessment is the basis for determining audit scope, frequency, and monitoring tools

Risk-Based Compliance Oversight Framework

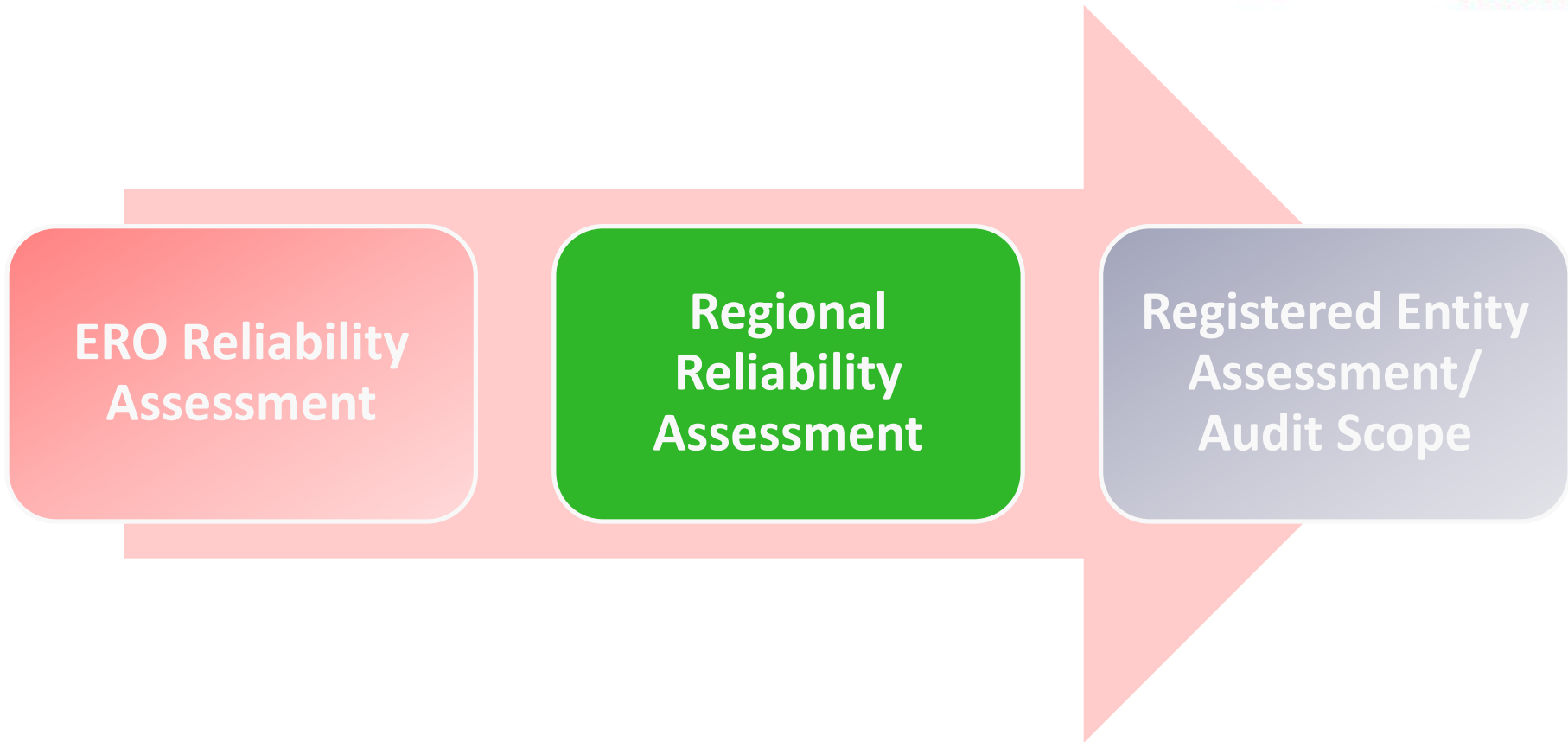
- **Framework consists of:**
 - **Processes that involve reviewing system-wide risk elements**
 - **Assessing Registered Entity's inherent risk**
 - **Voluntarily evaluating Registered Entity's Internal Controls before establishing Registered Entity's monitoring plan**

Risk-Based Compliance Oversight Framework



Development of Risk Elements

- Identifying and prioritizing continent-wide risks by:
 - NERC staff
 - Reliability Issues Steering Committee
 - Standards Independent Experts
 - ERO Enterprise Strategic Plan
- Risks categorized as operational/planning, cyber and physical security
- Through this process, ERO develops annual Risk Element Guide
 - Maps the baseline list of applicable Reliability Standards /Requirements



SPP RE ASSESSMENT

SPP RE Regional Audit Scope Plan

- **SPP RE developed a Regional Audit Scope Plan that identifies the risk elements in SPP RE footprint**
 - **Identified SPP RE Risk Elements:**
 - **Top Violated Reliability Standards**
 - **Facility Ratings Impacts**
 - **New enforceable Reliability Standards**
 - **Protection of Cyber Assets**

2015 SPP RE Monitoring Tools

- **On-site audits for Transmission Operators (TOPs) and Balancing Authorities (BAs) on 3-year cycle**
- **Ops & Planning will conduct off-site audits or spot checks for non-BA/TOP entities and recently-registered entities**
 - **Ops & Planning may perform Spot Checks for entities that had Areas of Concern identified in 2012 audits (non BA and TOP)**
- **CIP 2015 off-site audits for entities with no identified Critical Cyber Assets are cancelled through remainder of transition period (3/30/16)**

2015 SPP RE Monitoring Tools

- **Self-Certification**
 - SPP RE will continue to require entities to perform a Self-Certification to ensure their compliance with Reliability Standards
 - 2015 NERC IP has not identified Reliability Standards and Requirements that require Self-Certification
 - SPP RE has identified requirements based on the Regional Assessment
 - Self- certification will be conducted using webCDMS

2015 SPP RE Monitoring Tools

- **Periodic data submittal**
 - 2015 NERC IP does not identify Reliability Standards and Requirements that require periodic data submittals
 - SPP RE will require specific Reliability Standards that require periodic data submittal requirements
 - SPP RE or SPP RTO will collect them on a monthly, quarterly, or annual basis

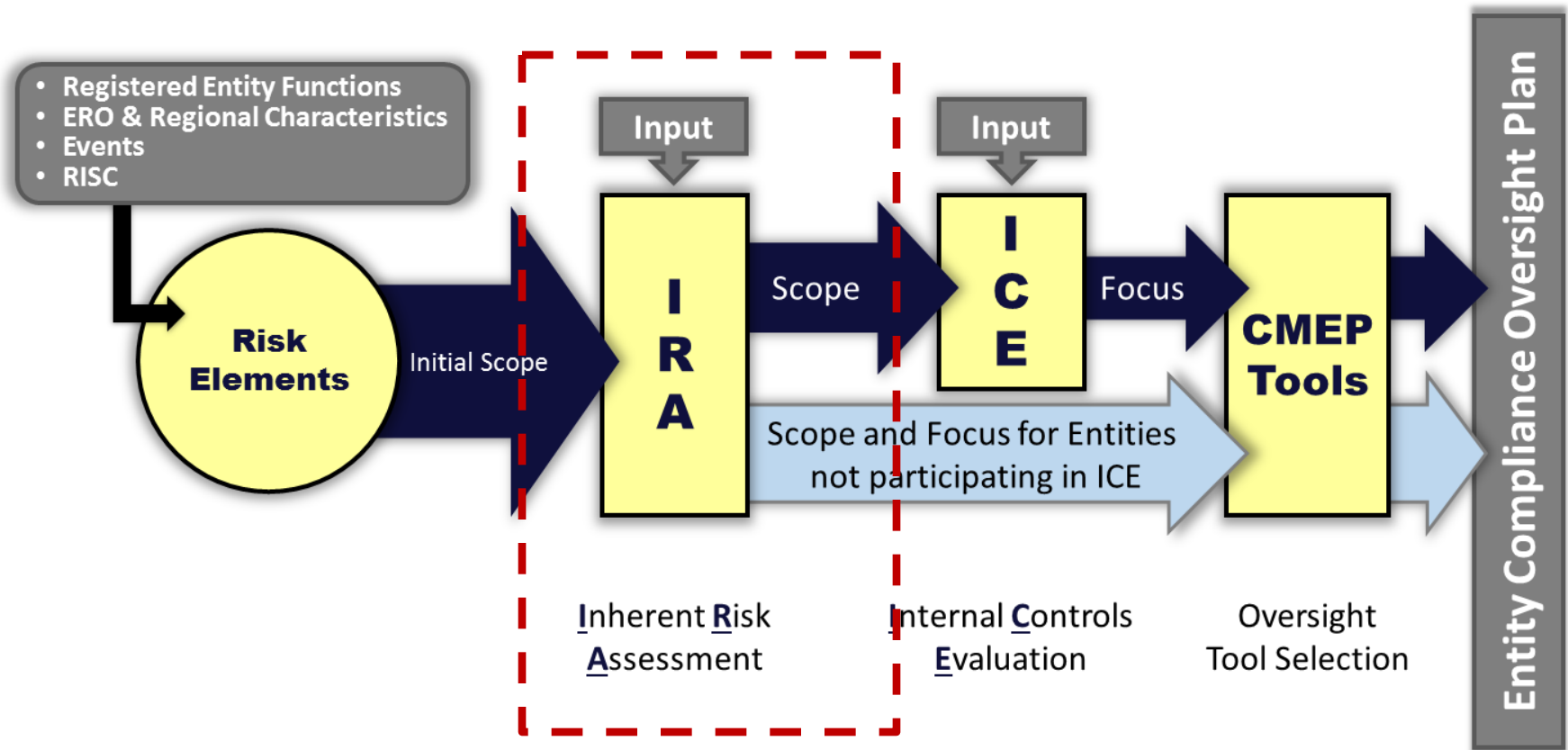
ERO Reliability Assessment

Regional Reliability Assessment

Registered Entity Assessment/
Audit Scope

REGISTERED ENTITY ASSESSMENT & AUDIT SCOPE

Inherent Risk Assessment





IRA and ICE Guides

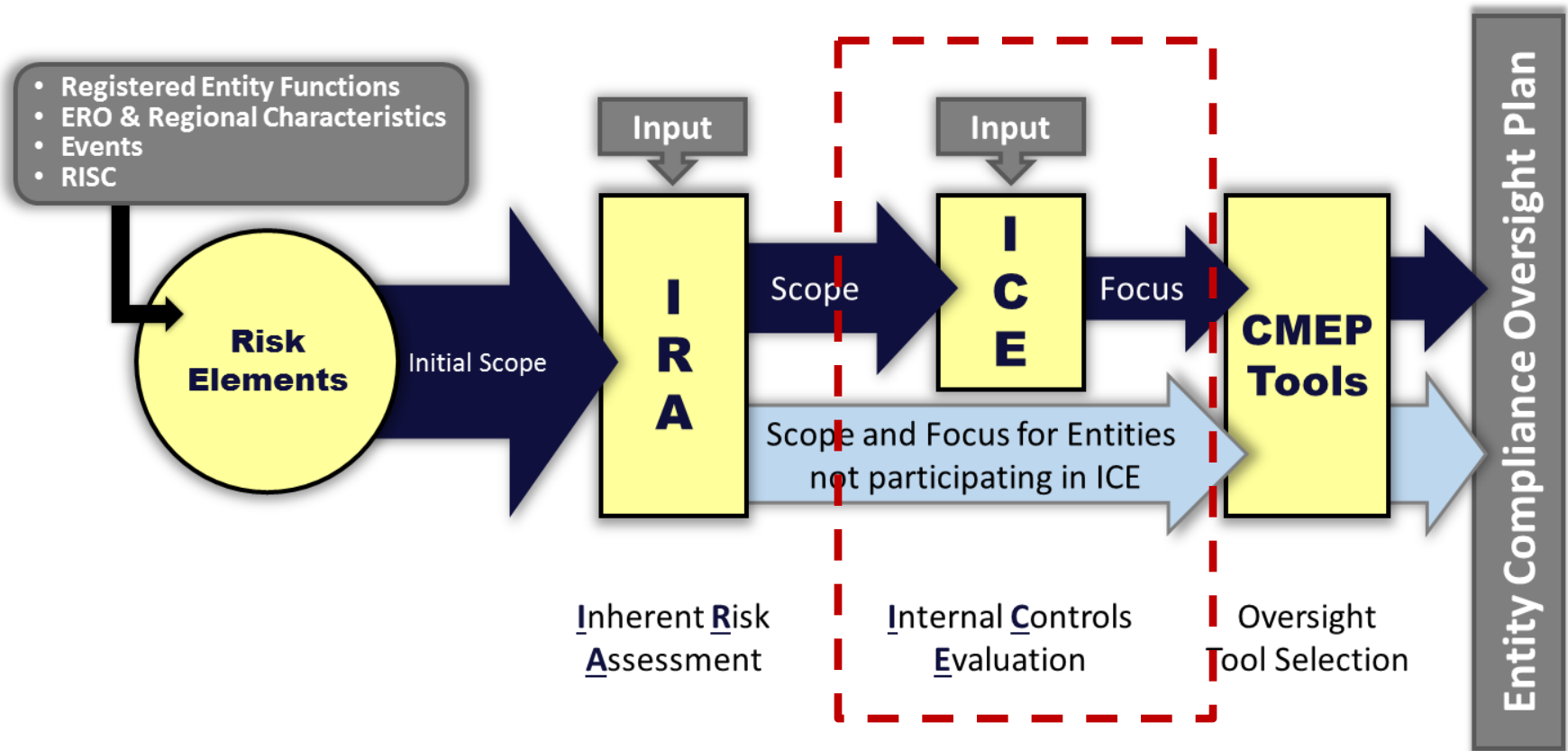
- **NERC developed Inherent Risk Assessment (IRA) Guide and Internal Control Evaluation (ICE) Guide**
- **REs will take into account the IRA and ICE processes to develop oversight plan for their regions**

SPP RE Inherent Risk Assessment

- To develop the monitoring scope, SPP RE will perform Registered Entity Risk Assessments for Registered Entities scheduled for 2015 monitoring
- The assessment criteria will review of the Registered Entity's attributes:

Registered functions	System restoration plan and responsibilities	Transmission Portfolio
Total megawatt capability	Blackstart resources	Major changes to Registered Entity's operations
Interconnection points and critical facilities and paths	IROLs	Regional Factors Affecting Reliability
Special Protection Systems	SOLs, voltage SOLs, Stability SOLs	Compliance and Enforcement History
SCADA and EMS systems	Critical Facilities designated by Planning Authority	Events and Misoperations – operations History
Undervoltage load shedding	CIP Critical Transmission and Generation Facilities	

Internal Controls Evaluation



Internal Control Evaluation (ICE)

- **NERC has posted an ICE Guide**
- **SPP RE Staff is attending a series of training sessions during the 4th quarter of 2014**
 - **More info will be rolled out to registered entities in 4Q2014/1Q2015**
- **ICE is a voluntary program**
- **Entities may elect to have their internal controls evaluated**
- **If a Registered Entity elects not to participate in ICE or doesn't have internal controls, SPP RE will monitor per usual**

Key Points for 2015

- **No AML**
- **Audit scope will continue to include a review of all mitigation plans open during audit period**
- **SPP RE will determine Registered Entity's scope based on:**
 - **ERO-wide Risk Elements**
 - **SPP RE Risk Elements**
 - **SPP RE Registered Entity Assessment**
 - **SPP RE staff judgment**

Registered Entities are responsible for compliance with all enforceable Reliability Standards and Requirements in effect per their registered function at all times, regardless of what a Registered Entity's risk profile may indicate.

ADDITIONAL INFORMATION

Continent-wide Risk Elements

- **Infrastructure Maintenance, AC Substation Equipment Failures, Aging Infrastructure**
 - ✓ PRC-005-2 – Protection System Maintenance
 - ✓ PRC-008-0 – UFLS Equipment Maintenance Program
 - ✓ PRC-011-0 – UVLS Maintenance
 - ✓ PRC-017-0 – SPS Maintenance
- **Uncoordinated Protection Systems**
 - ✓ PRC-001-1.1 – System Protection Coordination
- **Protection System Misoperations**
 - ✓ PRC-004-2.1a – Analysis and Mitigation of Misoperations
 - ✓ PRC-016-0.1 – SPS Misoperation
 - ✓ PRC-023-3 – Transmission Relay Loadability
 - ✓ PRC-025-1 – Generator Relay Loadability

Continent-wide Risk Elements

- **Workforce Capability**
 - ✓ CIP-004-3a – Cyber Security – Personnel & Training
 - ✓ EOP-001-2.1b – Emergency Operations Planning
 - ✓ EOP-003-2 – Load Shedding Plans
 - ✓ EOP-005-2 – System Restoration from Blackstart Resources
 - ✓ EOP-006-2 – System Restoration Coordination
 - ✓ PER-005-1 – System Personnel Training
 - ✓ TOP-004-2 – Transmission Operations
- **Long Term Planning and System Analysis**
 - ✓ TPL-001-0.1 – System Performance Under Normal Conditions

Continent-wide Risk Elements

- **Monitoring and Situational Awareness**
 - ✓ EOP-010-1 – Geomagnetic Disturbance Operations
 - ✓ IRO-002-2 – Reliability Coordination - Facilities
 - ✓ IRO-005-3.1a – Reliability Coordination – Current Day Operations
 - ✓ IRO-008-1 - Reliability Coordination Operational Analyses and Real-time Assessments
 - ✓ IRO-014-1 – Procedures, Processes, or Plans to Support Coordination Between RCs
 - ✓ PRC-001-1.1 – System Protection Coordination
 - ✓ TOP-002-2.1b – Normal Operations Planning
 - ✓ TOP-006-2 – Monitoring System Conditions
 - ✓ TOP-008-1 – Response to Transmission Limit Violations

Continent-wide Risk Elements

- **Threats to Cyber Systems**
 - ✓ CIP-002-3 – Critical Cyber Asset Identification
 - ✓ CIP-003-3 – Security Management Controls
 - ✓ CIP-004-3a – Personnel & Training
 - ✓ CIP-005-3a – Electronic Security Perimeter(s)
 - ✓ CIP-007-3a – System Security Management
 - ✓ CIP-009-3 – Recovery Plans for Critical Cyber Assets
- **Human Error**
 - ✓ COM-002-2 – Communication and Coordination

Continent-wide Risk Elements

- **Extreme Physical Events**
 - ✓ EOP-005-2 – System Restoration from Blackstart
 - ✓ EOP-006-2 – System Restoration Coordination
 - ✓ EOP-008-1 – Loss of Control Center Functionality
 - ✓ EOP-010-1 – Geomagnetic Disturbance Operations
 - ✓ TPL-002-0b – System Performance Following Loss of a Single Bulk Electric System Element
 - ✓ TPL-003-0b - – System Performance Following Loss of Two or More Bulk Electric System Elements
 - ✓ TPL-004-0a - System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements

SPP RE Risk Elements



SPP RE O&P Risk Elements Standards and Requirements				
Standard	Requirements	Applicable Functions	SPP RE Risk Element	Justification
FAC-003-3	R3.	TO, GO	New Requirement	Essential to ensure Generator Owners have a strategy to prevent vegetation encroachment into the MVCD.
FAC-008-3	R1, R2	GO	Facility Ratings	Essential to ensure Generator Owners develops accurate facility ratings
FAC-008-3	R3.	TO	Facility Ratings	Essential to ensure Transmission Owners develops accurate facility ratings
FAC-008-3	R6.	GO, TO	Facility Ratings	Essential to ensure Generation and Transmission Owners maintain and coordinate accurate facility ratings
FAC-008-3	R7.	GO	Facility Ratings	Essential to ensure the Generator Owners provide Facility Ratings to the RC, PC, TP, TO, TOP
FAC-014-2	R2.	TOP	Facility Ratings	Essential to ensure Transmission Operators establish and coordinate SOLs and IROLs.
PRC-005-1.b	R1.	TO, GO, DP	Top Violated /System Protection	Infrastructure maintenance
PRC-005-1.b	R2.	TO, GO, DP	Top Violated /System Protection	Infrastructure maintenance
TOP-004-2	R1.	TOP	System Awareness	Maintaining system awareness within the SPP RE footprint
TOP-004-2	R4.	TOP	System Awareness	Maintaining system awareness within the SPP RE footprint
TOP-002-2.1b	R6.	BA, TOP	System Awareness	Maintaining system awareness within the SPP RE footprint

SPP RE CIP Risk Elements Standards and Requirements				
Standard	Requirements	Applicable Functions	SPP RE Risk Element	Justification
CIP-005-3	R2, R3	BA, GOP, GO, RC, TOP, TO	Protection of Cyber Systems	Essential to ensure the system protecting the cyber system can continue to maintain a security perimeter.
CIP-006-3	R2, R3, R6,	BA, GOP, GO, RC, TOP, TO	Protection of Cyber Systems	Essential to ensure the protection of Cyber Assets from unauthorized physical access.
CIP-007-3	R3, R5	BA, GOP, GO, RC, TOP, TO	Protection of Cyber Systems	Essential to ensure applicable security patches are identified and installed on the CIP systems.

2015 Monitoring Schedule – O & P



NCR Number	Entity Name	Type of Audit
NCR01056	American Electric Power Service Corp. (AEPW)	On-Site
NCR01062	Borger Energy Associates, LP (BOEA)	Off-Site
NCR11291	Chisholm View Wind Project, LLC	Off-Site
NCR11250	Dogwood Power Management, LLC (DPM)	Off-Site
NCR01227	East Texas Electric Cooperative, Inc. (ETEC)	Off-Site
NCR01107	Kansas City Power & Light Company (KCPL)	On-Site
NCR01109	Kansas Electric Power Cooperative, Inc. (KEPC)	Off-Site
NCR06047	Lea County Electric Cooperative, Inc. (LCEC)	Off-Site
NCR00826	Midcontinent Independent System Operator, Inc (MISO)	On-Site
NCR01118	Midwest Energy, Inc. (MIDW)	On-Site
NCR03044	MISO-MBHydro Contingency Reserve Sharing Group (MRSG)	On-Site
NCR11236	NAES Corporation - Goodman Energy Center (NAESGEC)	Off-Site
NCR01096	NextEra Energy Resources, LLC (NEXTERA)	Off-Site
NCR06054	North American Energy Services - Dogwood (NAESDOGW)	Off-Site
NCR01124	Northeast Texas Electric Cooperative, Inc (NTEC)	Off-Site
NCR11224	PIC Group, Inc.- Mustang (PICMUS)	Off-Site
NCR11264	Post Rock Wind Power Project, LLC	Off-Site
NCR01148	Sunflower Electric Power Corporation (SECI)	On-Site
NCR01152	Terrebonne Parish Consolidated Government (TERREBONNE)	Off-Site
NCR01342	Tex-La Electric Cooperative Of Texas, Inc (TEXL)	Off-Site
NCR01160	Western Farmers Electric Cooperative (WFEC) w/ TRE	On-Site

2015 Audit Schedule - CIP

NCR Number	Entity Name	Type of Audit
NCR01081	City Utilities of Springfield	On-Site
NCR01144	Southwestern Power Administration	On-Site
NCR01160	Western Farmers Electric Cooperative (WFEC) w/ TRE	On-Site
NCR00826	Midcontinent Independent System Operator, Inc (MISO)	On-Site
NCR01101	Grand River Dam Authority	On-Site
NCR01130	Oklahoma Gas & Electric Company	On-Site

Reporting Periods

- [SPP.org>Regional Entity>Compliance & Enforcement>2015 Compliance Program](#) folder will be populated with relevant documents:
 - Monitoring schedules
 - Annual CIP and Ops/Planning Self Certification
 - Periodic Data Submittal
 - 2015 Audit Scope Plan

Reference Documents

- [NERC.com Compliance Resources page](#)
- [SPP.org Compliance and Enforcement page](#)

Enforcement Update

October 27, 2014

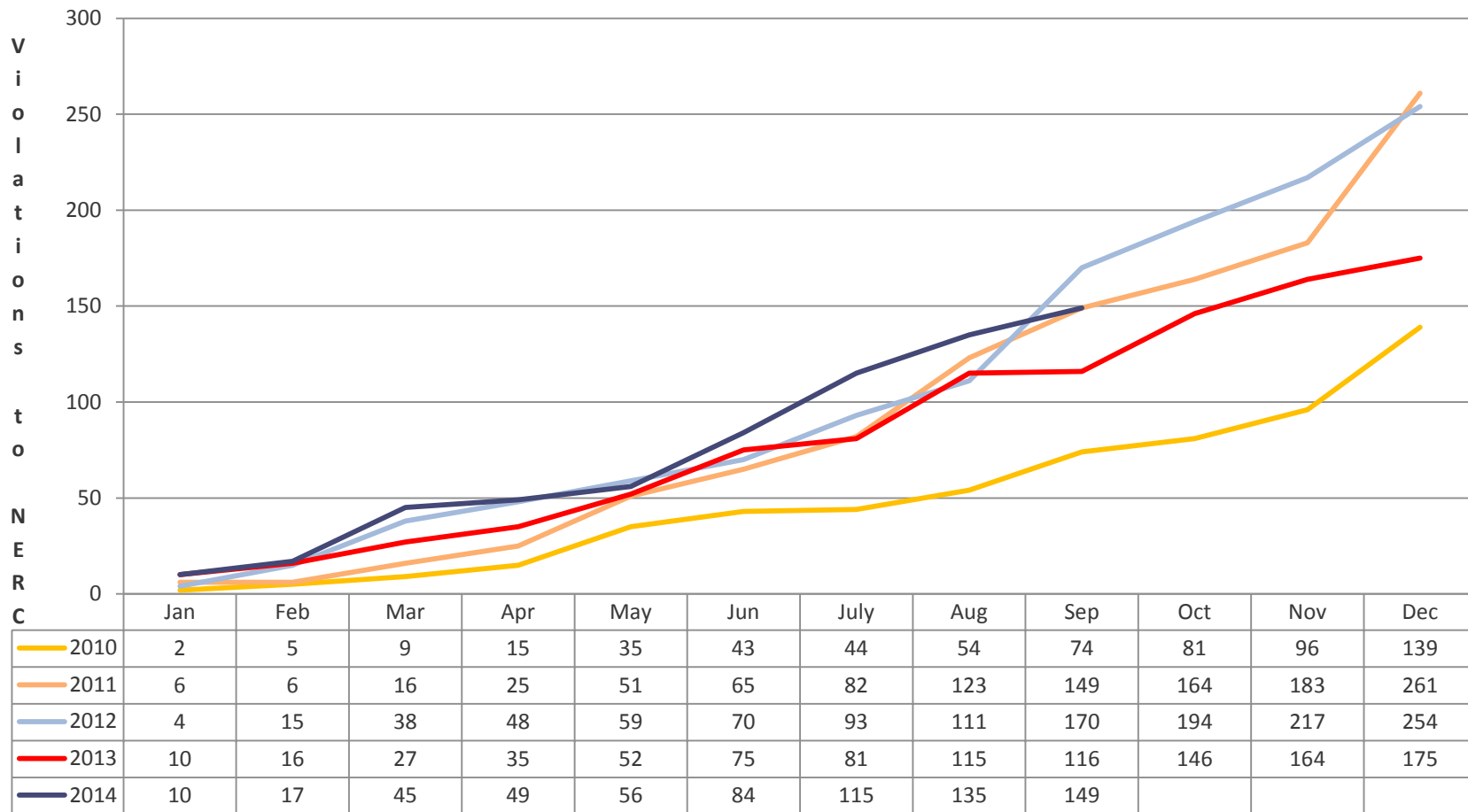
Joe Gertsch
Manager of Enforcement
jgertsch.re@spp.org
501-688-1672



SPP RE Enforcement Activities September 30, 2014	2007	2008	2009	2010	2011	2012	2013	First Quarter	Second Quarter	July	August	September	Total 2014
Notice of Preliminary Screen Issued	-	-	-	-	-	-	-	26	43	5	6	19	99
Notice of Possible Violations Issued	6	56	132	254	239	173	189	13	30	3	21	7	74
Notice of Alleged Violation (NAVAPS)													
NAVAPS Issued	6	45	10	7	0	2	1	0	0	0	6	0	6
Notice of Confirmed Violation (NOCV)													
NOCV Sent to Entity/NERC	0	8	25	15	4	1	0	1	0	0	0	0	1
NOCV BOTCC Approved	0	7	11	29	4	1	0	1	0	0	0	0	1
Settlements / Full Notice of Penalty													
To NERC for Approval	0	0	0	89	118	52	5	0	5	0	0	0	5
BOTCC Approved	0	0	0	50	81	103	14	15	0	0	0	0	15
Settlements / Spreadsheet NOP													
To NERC for Approval	0	0	0	16	22	49	43	10	10	20	1	5	46
BOTCC Approved	0	0	0	0	38	49	65	1	9	10	1	0	21
Find, Fix, Track													
To NERC for Approval	-	-	-	-	43	78	86	22	10	3	13	6	54
BOTCC Approval	-	-	-	-	36	74	95	14	14	5	15	6	54
Dismissals													
To NERC/SPP RE SRT for Approval	0	0	1	16	75	43	41	11	15	8	1	2	37
NERC/SPP RE SRT Approved		0	1	16	75	43	41	11	15	8	1	2	37
Notice of Penalty													
Approved by FERC	0	5	13	57	180	184	141	58	9	0	10	0	77
Violations Awaiting BOTCC Approval												20	
Active Violations - Caseload													142
Caseload Index (months)*													8.2

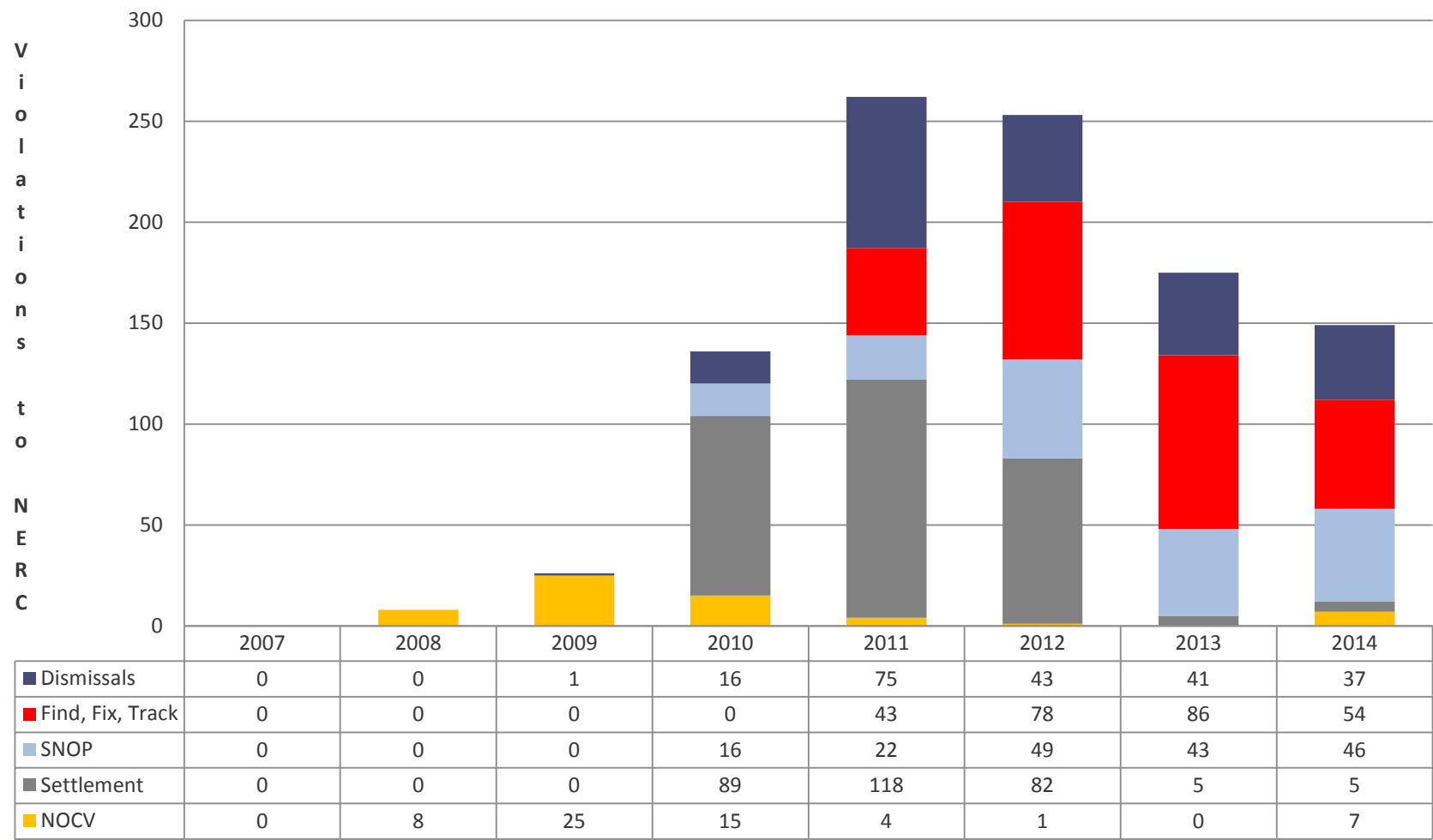
* Based on previous 12 months processing (209)

Enforcement Monthly Violation Processing



Running Total Violations

Enforcement Processing Methods



Enforcement Caseload – September 30, 2014

- **142 - Open Violations**
 - 6 – NAVAPS Issued (previously on Administrative Hold)
 - 37 - Joint Settlement w/ Other Regions
 - 8 - Settlement
 - 74 - Settlement Not Requested (NAVAPS/NOCV)
 - 17 - Administrative Hold
- **51 - 693 Violations**
- **91 - CIP Violations**
- **14 - High Impact Violations**
- **Discovery Method**
 - 44 - Audit
 - 71 - Self Report
 - 17 - Self Certification
 - 1 - Spot Check
 - 9 - Investigation

Caseload Aging

- **SPP RE – 82 violations, average age - 237 days**

<u>Age (days)</u>	<u>Violations</u>
> 300	19
201 – 300	23
101 – 200	19
51 – 100	6
1 - 50	15

- **MRRE – 37 violations, average age - 374 days**
- **Admin Hold – 23 violations, average age - 1099 days**

High Impact Violation Summary

- **14 – Open High Impact Violations**
 - 3 - Settlement
 - 2 - Multi Region
 - 9 - Disposition Undetermined
- **Open High Impact Violations Mitigation Status**
 - 6 - Mitigation Plan Complete
 - 8 - Mitigation Plan Accepted

SPP RE 2014 Violation Dismissals

Consolidation with another violation	19
NERC V3 – V5 Guidance (approach 2)	2
Self-Report wrong standard and/or requirement.....	5
Provided exculpatory evidence	6
Incorrect Interpretation of Standard	<u>5</u>
Total	37

September Mitigation Plan Summary

- **Mitigation Plan Status (month/year)**

Submitted	2/87
Accepted	20/93
Certified Complete	4/81
Completion Verified	5/83

- **Open Violations with no Mitigation Plans**

Administrative Hold	7
Work in Progress	1
Initiated	59
Submitted	<u>2</u>
Total	69



SPP *Southwest
Power Pool
Regional Entity*

Joe Gertsch
Manager of Enforcement
jgertsch.re@spp.org
501-688-1672

SPP Organizational Group Self-Evaluation/Assessment
(August 1, 2013 – August 1, 2014)

GROUP NAME: **SPP Regional Entity Trustees**

CHARTER/SCOPE UPDATE: Attached Charter/Scope has been reviewed: **N/A**

MEMBER ROSTER/ATTENDANCE PUBLIC :

Member	Company	Sector	# Present	# Absent
John Meyer	RE Trustee, Chairman	N/A	5	-
Gerry Burrows	RE Trustee	N/A	5	-
Dave Christiano	RE Trustee	N/A	5	-
Emily Pennel	RE Trustee Secretary	N/A	5	-

Please list the number of members represented in the following areas:

Trans/Owners	Trans/Users	Directors
N/A	N/A	N/A

Sectors							
IOU	Coop	Muni	State/Fed	IPP/Marketer	Alt Power/Public Interest	Lg Retail	Sm Retail
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

AVERAGE OVERALL ATTENDANCE (INCLUDING NON-GROUP MEMBERS): 38

MEETINGS HELD TO DATE: Live: 5 Teleconference: 0

AVERAGE LENGTH OF MEETINGS: 3.9 HOURS

NUMBER OF VOTES TAKEN: 10

***MEETING COST(S): \$84,567**

MAJOR ACCOMPLISHMENTS/ISSUES ADDRESSED BY THE GROUP:

1. Overall 2013 staff performance goals and metrics achievement was 104.36%
2. Ron Ciesiel served as executive sponsor and two SPP RE staff served on the development team for the NERC Auditor Handbook, which was published in May 2014
3. Successfully implemented Bulk Electric System Definition exception process
4. Reviewed/accepted three regional reliability assessments
5. Continued compliance outreach program of webinars, workshops, newsletters, and videos. The 2013 average number of registrants per webinar increased 64% over 2012; workshops had a 7% increase in participants
6. Maintained generally favorable stakeholder satisfaction scores
7. Maintained <12 month enforcement caseload
8. Operated RE within approved budget limits

MAJOR PENDING ISSUES BEFORE THE GROUP:

1. Continue working with Registered Entities on CIP version 3 to version 5 transition
2. Continue working with NERC and other Regional Entities to streamline and standardize CMEP processes through tools and initiatives such as the Reliability Assurance Initiative, auditor training/certification, added on-site audit efficiencies, and risk-informed audit scope
3. Monitor Registered Entities' remediation of Facility Ratings discrepancies (FAC Alert), which draws to completion at the end of 2014
4. Continue focusing on and monitoring relay misoperations and the Event Analysis program
5. Continue targeting outreach to improve Registered Entity compliance programs to reduce violations and achieve greater BES reliability

* Meeting costs include hotel expenses (room rental, A/V, food and beverage) and Trustee fees for attendance at quarterly and special meetings.

TO: SPP Regional Entity Trustees
FROM: Ron Ciesiel, SPP RE General Manager
DATE : October 27, 2014
SUBJECT: SPP RE General Manager Report

Emerging Issues

NERC Reliability Assurance Initiative [RAI]

With the wrap-up of the RAI pilot programs, the RAI Steering Team has issued two final reports on the direction of the remaining attributes of the initiative; first, Inherent Risk Assessment [IRA] has been issued and the SPP RE is in the process of making minor adjustments to its program to accommodate the attributes listed in the IRA document. SPP RE's current practices are very close to the final NERC practice and Registered Entities should not see much change in this area, and secondly, Internal Controls Review [ICR] was released at the end of the summer. The goal of the RAI project is to close the gap between the one-size-fits-all program of today to a more risk informed customized program melding all of the compliance oversight tools into a single oversight engagement rather than discreet actions as they are done today. The ICR is a formal program outlined for the REs to follow to assess the internal control programs of the registered entities. This process will allow the REs to customize approaches to compliance oversight for specific registered entities. A series of training events for the RE staff is scheduled during the 4th quarter of 2014 for rollout to the registered entities in 2015.

In addition, upgrades to webCDMS have been completed which will allow the SPP RE to implement the Compliance Exception category to its decision making toolkit. A Compliance Exception will be a very minor infraction that the RE does not believe merits enforcement action and will be 'off ramped' at the RE, catalogued, trended and bulk uploaded to NERC on a periodic basis. Implementation of the 'compliance exception' attribute should be the week of October 27th.

BES Definition and Exemption Process

Official effective date was July 1, 2014.

Activity has been moderate to date in SPP RE ~ 130 total requests with no major surprises to-date.

SPP RE has been meeting its review timelines for those items that have been submitted with SPP RE staff.

Registration Program Review

In conjunction with the rollout of the revised BES definition, NERC has begun an initiative to review and possibly revamp the entity registration criteria. This effort may include the elimination of certain registered functions, raising the threshold requirements for certain others and a change to performance requirements for tiered functions in the registry.

In **final draft** form, the following functions are recommended for elimination:

Load Serving Entity [LSE]
Interchange Authority [IA]
Purchasing Selling Entity [PSE]

In **final draft** form, the threshold for inclusion in the registry for a Distribution Provider [DP] is recommended to increase from 25MW to 75MW.

This effort is underway with final recommendations to be presented to the NERC Board of Trustees at the November 2014 round of meetings.

CIP Transition and Physical Security Standard

The CIP v3 to v5 pilot project is wrapped up and the results will be used to help guide us, the SPP RTO and the SPP RE Registered Entities during the next ~ 20 months as all of the entities transition from v3 to v5.

NERC has issued a transition guidance document for use by the REs and the Registered Entities that includes instructions on how to deal with issues surrounding the now defunct Version 4, oversight activities for small entities, plus other issues.

In **final form** some of the current items being implemented include:

1. The cessation of audits of entities with no current Critical Assets;
2. Allowance to declare the use of the V4 or V5 Brightline Criteria in lieu of the V3 RBAM technique;

3. Requirement of the registered entities to declare their decision on number 2 above before scheduled compliance activities begin; and
4. An increased outreach effort by the REs in the form of non-compliance discussions with individual entities on the transition issues [similar to previous Readiness Evaluation Program].

In addition, the FERC ordered NERC to fast track a Physical Security Standard [CIP-014] for completion in 2014 and implemented in 2015. The Standard has been finished and voted on by the Standards Ballot body, approved by the NERC BOT and has been submitted to the FERC for final approval.

2015 Budget

The approved 2015 SPP RE budget calls for a flat budget when compared to the 2014 budget, including a slight reduction in manpower.

All RE and NERC budgets have been approved by both NERC and FERC for implementation in 2015.

Public Speaking Engagements

I spoke at the NAES compliance forum held during August 2014.

SPP RE staff presented a CIP Asset identification training module at both the NERC ERO Auditor Workshop and the North American Generator Forum during the 3rd quarter.

Administrative and Organizational Issues

Organizational

None to report for this period

Staffing

The following personnel changes were made since the last report:

Promotions – None

Additions – None

Terminations – Tyler Morgan, Enforcement Attorney, left the SPP RE during the 3rd quarter.

Currently, the SPP RE has 4 open positions, including:

Director of Compliance position,
Two technical positions in the Events and RAPA area, and
One Enforcement Attorney.

GM note: We are holding these positions open at the current time while we evaluate organizational needs for the final implementation of the RAI components. This assessment should be finished by the end of the year and final organizational changes, if needed, will be announced at that time.

Administrative

None to report for this period.

Respectfully submitted:

Ronald W. Ciesiel
SPP RE General Manager
October 27, 2014

SPP RE Compliance Update to the SPP RE Trustees

October 27, 2014

Little Rock, Arkansas

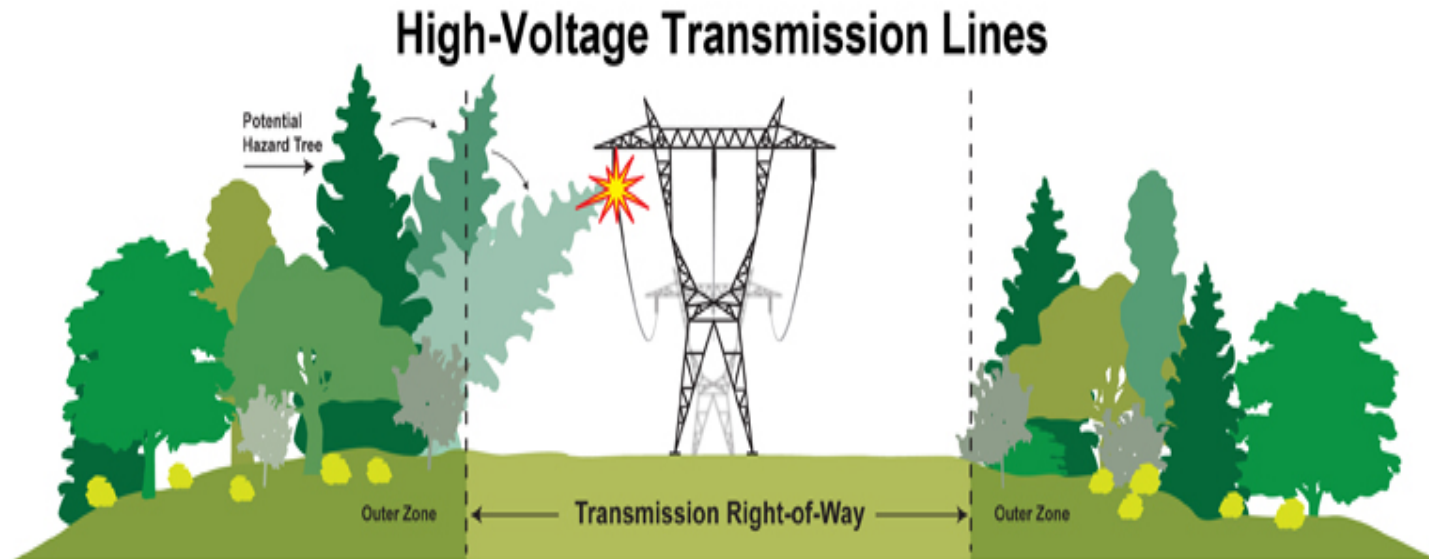
Ron Ciesiel

SPP RE General Manager



Vegetation Management Update

- NERC 3Q 2014 Vegetation Management Report
 - No reportable contacts in SPP RE footprint
 - 6th consecutive quarter with no reportable contacts



NERC Facility Ratings Alert as of:

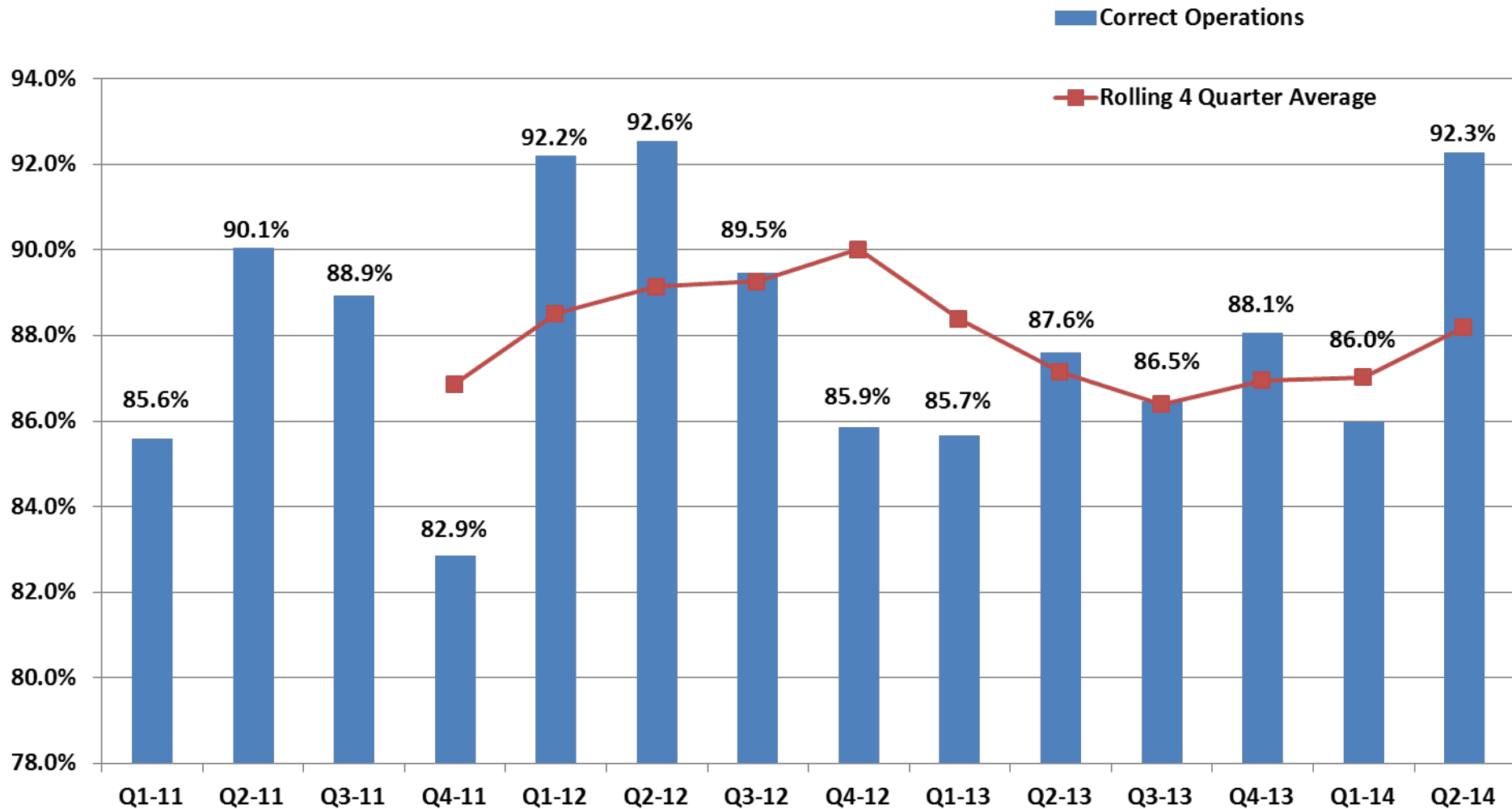
July 2014

January 2014

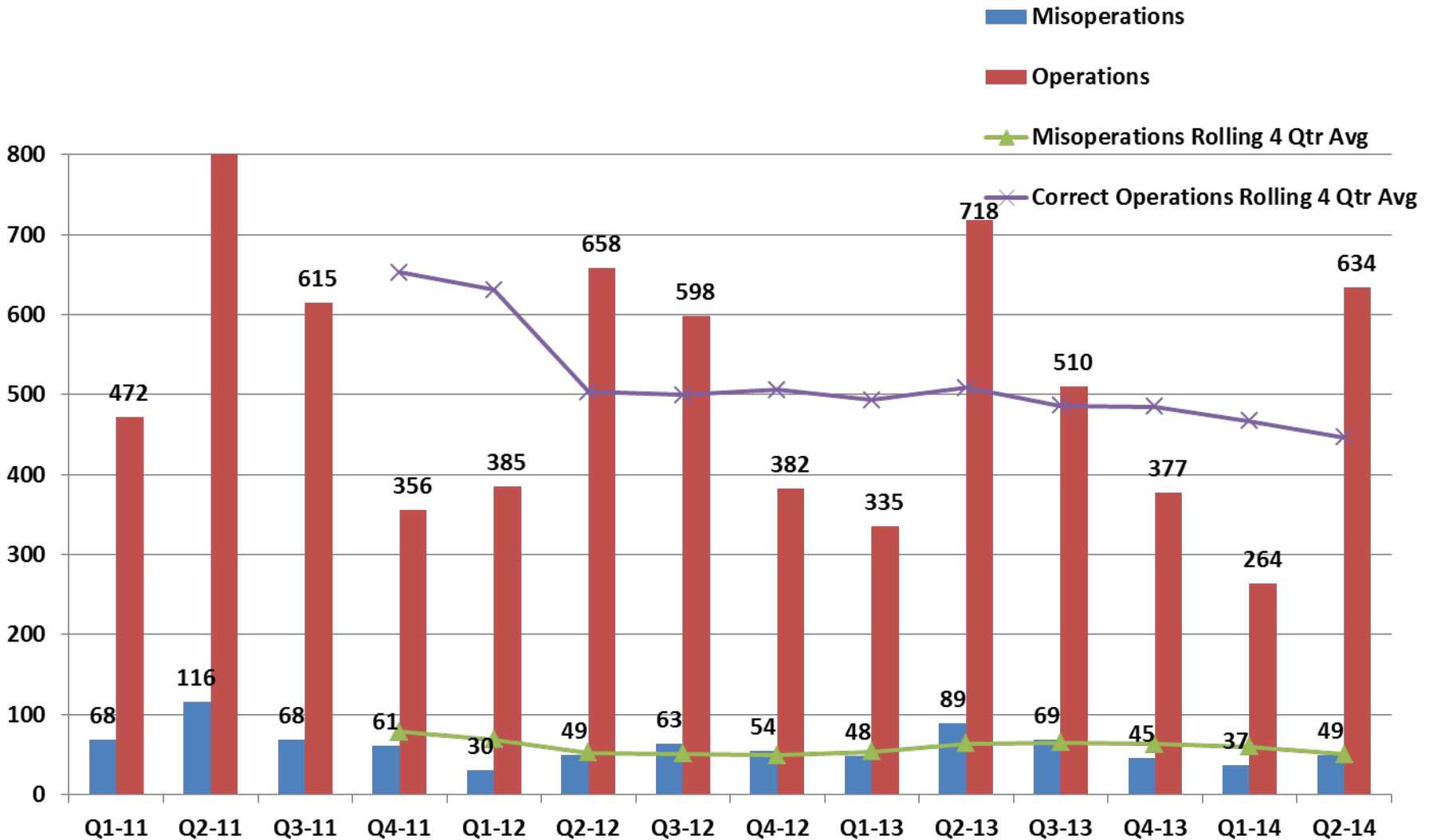
	SPP	National
High Priority 345 kV+	~420 discrepancies 100% remediated	7,966 discrepancies 88% remediated
Medium Priority 230 kV – 345 kV	~1,980 discrepancies 68% remediated	21,612 discrepancies 88% remediated
Low Priority Below 230 kV	~4,050 discrepancies 67% remediated	21,249 discrepancies 34% remediated

Remediation to be completed within one year of discovery or end of 2014, whichever is earlier, unless under an extension request

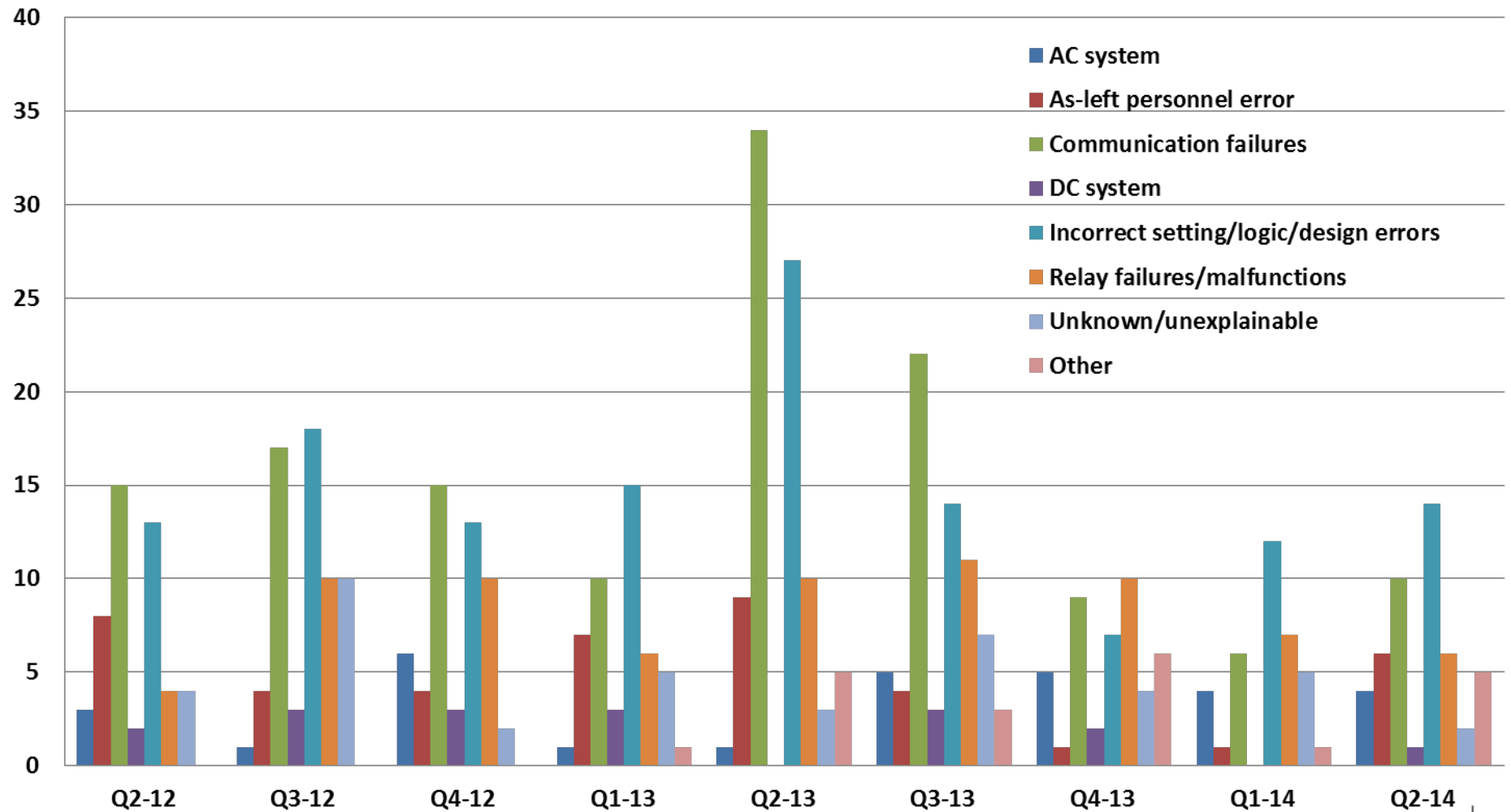
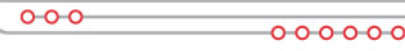
SPP RE Misoperation Report as of 2Q 2014



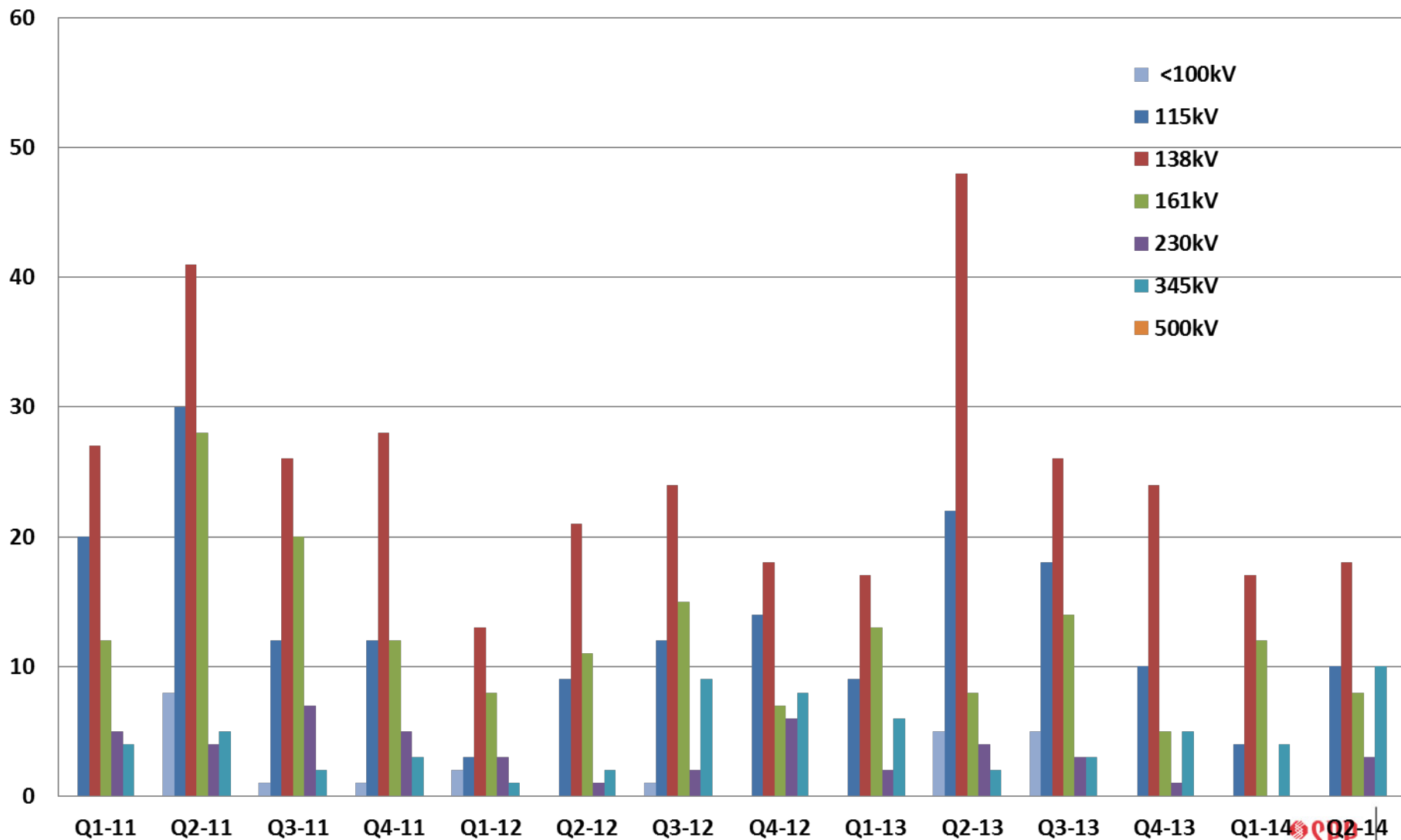
Operation/Misoperation Comparison



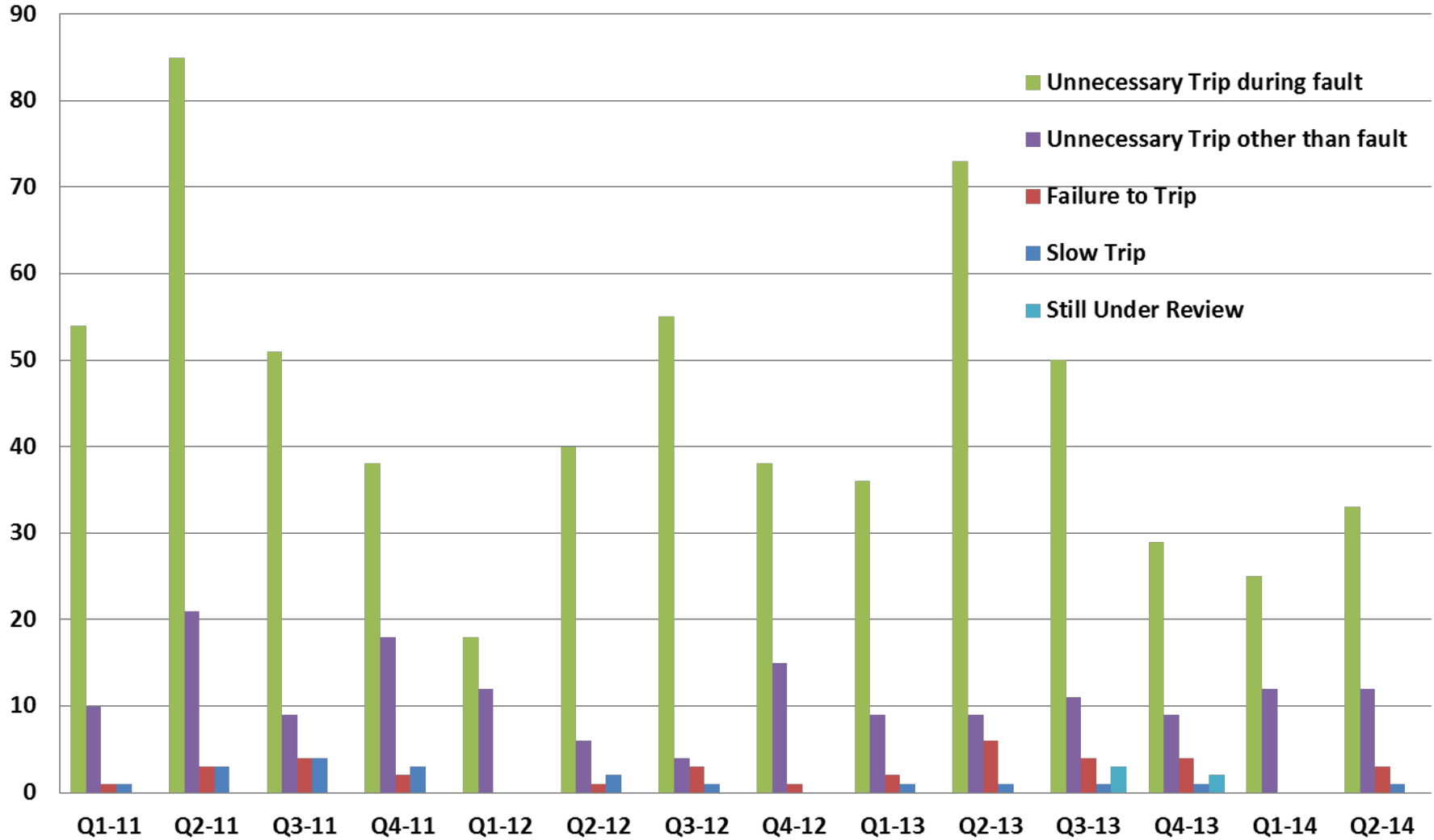
Causes of Misoperations 2Q 2012-2Q 2014



Misoperations by Voltage



Misoperations by Type



Most Violated Standards

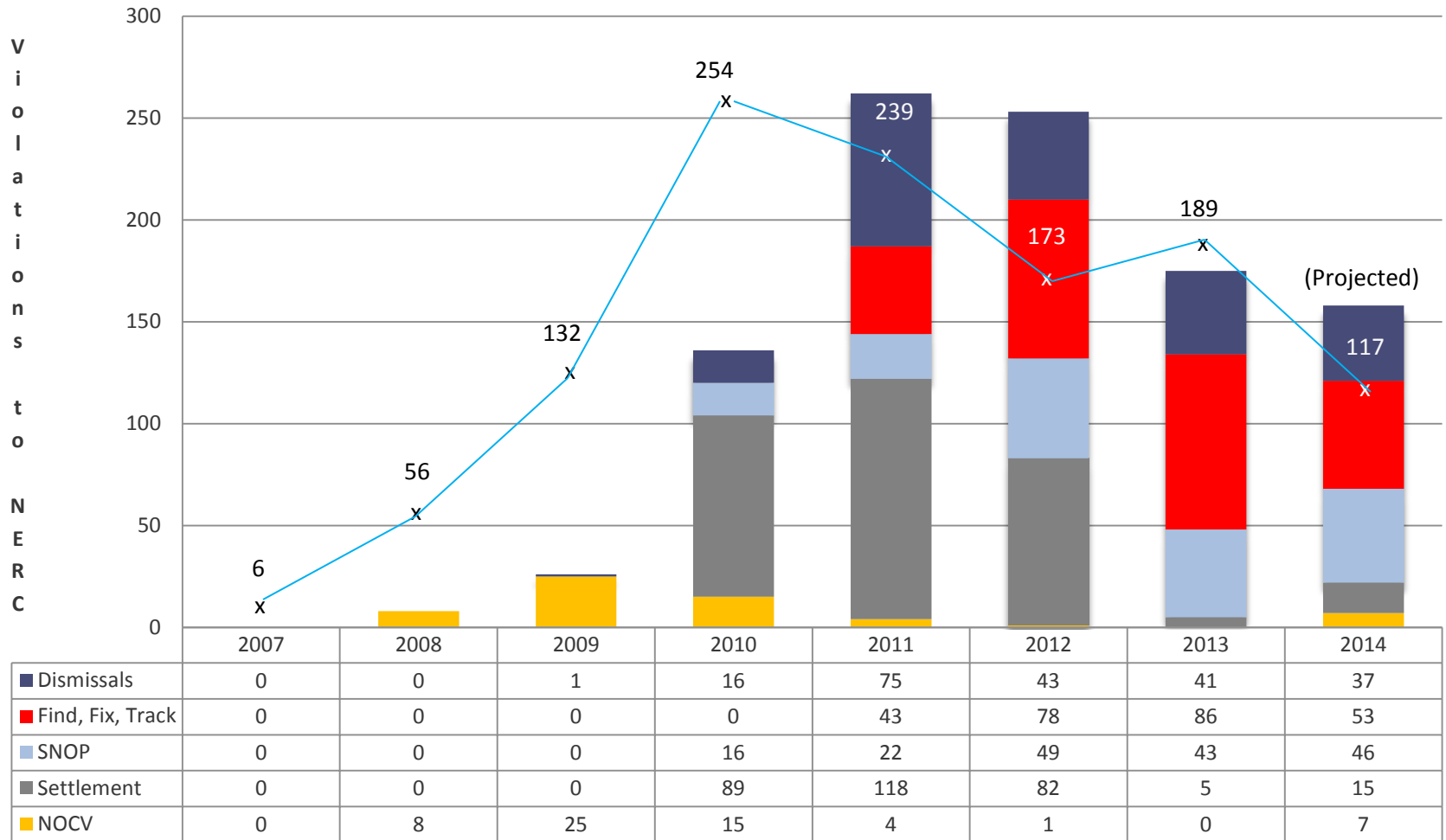
Based on rolling 12 months through 9/30/14 [Represents ~ 88% of total violations]

SPP RE Rank	NERC 12 Month Rank *	Standard	Description	Number of Violations	Risk Factor
1	1	CIP-007	Systems Security Management	32	Med./Lower
2	3	CIP-005	Electronic Security Perimeters	22	Med./Lower
3	2	CIP-006	Physical Security - Critical Cyber Assets	15	Med./Lower
4	10	FAC-008	Facility Ratings (includes FAC-009)	13	Med./Lower
5	7	CIP-002	Critical Cyber Asset Identification	12	High/Lower
6	6	CIP-003	Security Management Controls	10	Med./Lower
7	4	CIP-004	Personnel & Training	9	Med./Lower
8	5	PRC-005	Protection System Maintenance	8	High/Lower
9	8	VAR-002	Network Voltage Schedules	5	Med./Lower
10	**	TOP-002	Normal Operations Planning	4	Med./Lower

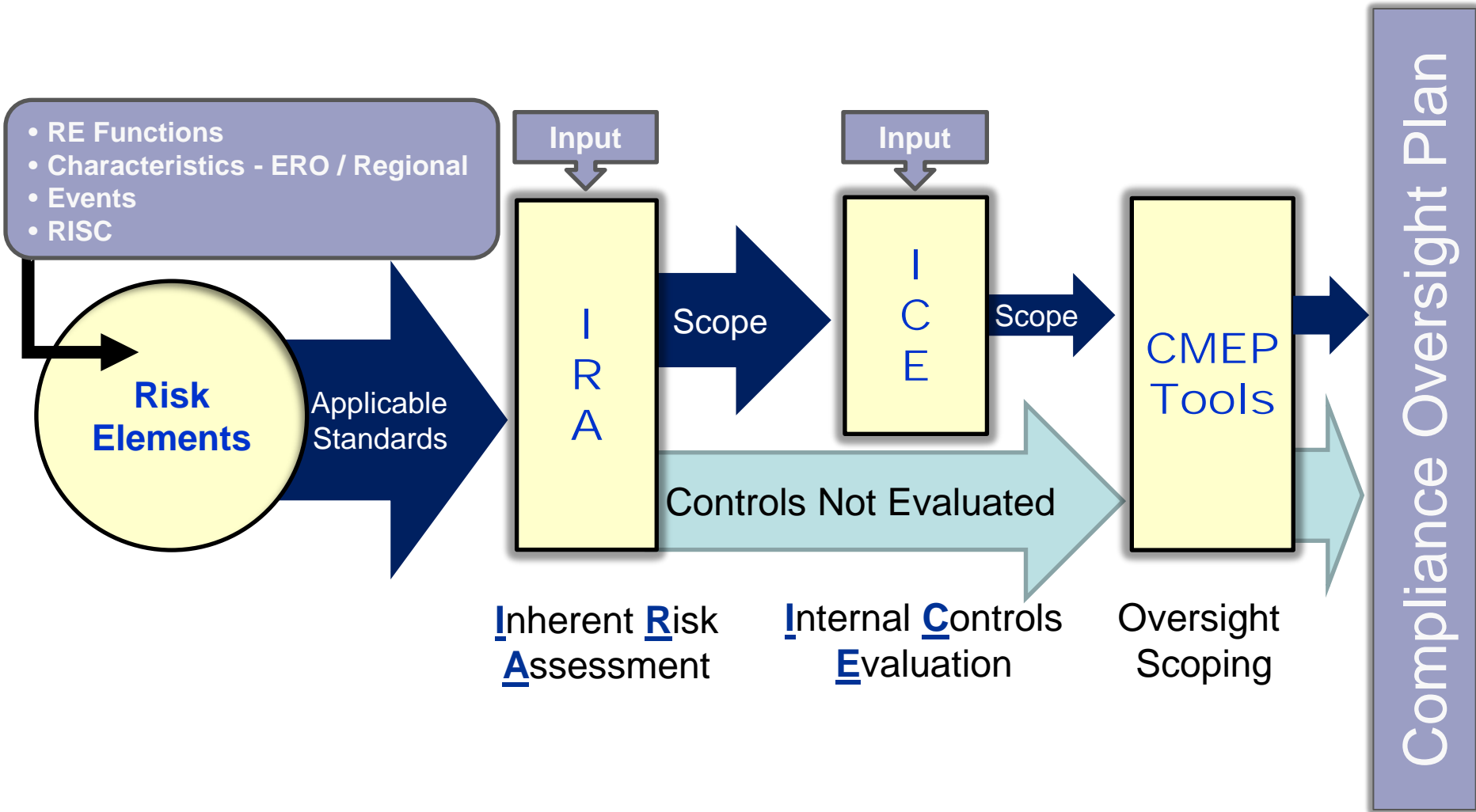
* NERC as of June 30, 2014

** Not in NERC Rolling 12 month Top Ten

Enforcement Processing by Method



RAI Oversight Plan Framework



SPP RE September 2014 Financial Report

October 27, 2014

Debbie Currie

RE Manager of Regulatory
Interface and Process
Improvement



September 2014 Financial Overview

- **SPP RE currently has 4 open positions (Director, 2 Engineers and an Enforcement Attorney)**
 - **Open positions drive a large percentage of actual to budget variance**
 - **Impacts Personnel Expenses, Travel Expenses and SPP, Inc. Overhead Charge**
 - **These positions are included in the 2015 Budget**
 - **RAI Initiatives can be handled with existing staff or by filling open positions**

September 2014 Financial Overview, cont.

- **Contractor/Consultant/Professional Service costs below budget**
 - **Audit Performance Improvement by Registered Entities**
 - **Reduction in violations**
 - **Cancellation of CIP audits**
 - **No hearings**
 - **Increase in staff experience**
 - **Smooth roll-out of BES definition**

September 2014 YTD Actuals vs. Budget

- **Total expenses are ~\$1.7 Million under budget**
 - **Personnel Expenses ~\$576K under budget**
 - **Meeting/Travel Expenses ~\$105k under budget**
 - **Professional Services ~\$479k under budget**
 - **SPP, Inc. Overhead Charge ~\$511k under budget**

Year-End Projection

- **Projected year-end budget underrun increased from \$1.85 Million to \$2.2 Million**
 - **Personnel Expenses projected to be ~\$800K under budget**
 - **Meeting/Travel Expenses ~\$150k under budget**
 - **Professional Services ~\$600k under budget**
 - **SPP, Inc. Overhead Charge ~\$650k under budget**

Questions?

Debbie Currie

**Manager, Regulatory Interface and Process
Improvement**

dcurrie.re@spp.org

SOUTHWEST POWER POOL REGIONAL ENTITY
STATEMENT OF ACTIVITIES
2014 SEPTEMBER YTD DRAFT (UNAUDITED)

<i>(In Whole Dollars)</i>	2014 SEPT YTD ACTUAL	2014 SEPT YTD BUDGET	VARIANCE	2014 FULL YEAR PROJECTION	2014 FULL YEAR BUDGET	VARIANCE
Funding						
ERO Funding	6,914,342	6,914,342	-	9,219,123	9,219,123	-
Penalty Sanctions	381,250	381,250	-	508,333	508,333	-
Total SPP RE Funding	7,295,592	7,295,592	-	9,727,456	9,727,456	-
Testing Fees	-	-	-	-	-	-
Workshops	-	-	-	-	-	-
Interest	2,017	-	2,017	-	-	-
Miscellaneous	-	-	-	-	-	-
Total Funding (A)	7,297,609	7,295,592	2,017	9,727,456	9,727,456	-
Expenses						
Personnel Expenses						
Salaries	2,571,317	3,077,501	(506,184)	3,400,387	4,103,334	(702,947)
Payroll Taxes	185,930	235,429	(49,499)	245,165	313,905	(68,740)
Benefits	239,123	248,104	(8,980)	318,334	330,805	(12,471)
Retirement Costs	111,692	123,100	(11,407)	148,291	164,133	(15,842)
Total Personnel Expenses	3,108,063	3,684,133	(576,070)	4,112,177	4,912,177	(800,000)
Meeting Expenses						
Meetings	60,548	68,625	(8,077)	79,963	91,500	(11,537)
Travel	267,561	364,500	(96,939)	347,537	486,000	(138,463)
Conference Calls	-	-	-	-	-	-
Total Meeting Expenses	328,109	433,125	(105,016)	427,500	577,500	(150,000)
Operating Expenses						
Contracts & Consultants	525,550	773,250	(247,700)	720,653	1,031,000	(310,347)
Office Rent	-	-	-	-	-	-
Office Costs	7,726	6,000	1,726	10,163	8,000	2,163
Administrative Costs	-	-	-	-	-	-
Professional Services	116,666	349,575	(232,909)	174,284	466,100	(291,816)
Computer Purchase & Maint.	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-
Miscellaneous/ Contingency	-	-	-	-	-	-
Total Operating Expenses	649,942	1,128,825	(478,883)	905,100	1,505,100	(600,000)
Total Direct Expenses	4,086,114	5,246,083	(1,159,968)	5,444,777	6,994,777	(1,550,000)
SPP Inc. Indirect Expenses	3,110,602	3,621,639	(511,037)	4,178,852	4,828,852	(650,000)
SPP RE Indirect Expenses	-	-	-	-	-	-
Total Indirect Costs	3,110,602	3,621,639	(511,037)	4,178,852	4,828,852	(650,000)
Total Expenses (B)	7,196,717	8,867,722	(1,671,005)	9,623,629	11,823,629	(2,200,000)
Net Change in Assets (A-B)	100,893	(1,572,130)	1,673,022	103,827	(2,096,173)	2,200,000
Fixed Assets						
Depreciation	-	-	-	-	-	-
Computer & Software CapEx	-	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-	-
Equipment CapEx	-	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-	-
Increase/(Decrease) in Fixed Assets (C)	-	-	-	-	-	-
Total Budget (Expenses plus Incr (Dec) in Fixed Assets (B+C))	7,196,717	8,867,722	(1,671,005)	9,623,629	11,823,629	(2,200,000)
Change in Working Capital (Total Funding less Total Budget) (A-B-C)	100,893	(1,572,130)	1,673,022	103,827	(2,096,173)	2,200,000
FTEs*	29.5	34.5	(5)	31	34.5	(3.5)
Beginning WC - 01/01/2014	3,383,977	2,096,173	1,287,804	3,383,977	2,096,173	1,287,804
Change to WC - 2014 YTD	100,893	(1,572,130)	1,673,022	103,827	(2,096,173)	2,200,000
Working Capital as of 9/30/14	3,484,870	524,043	2,960,827	3,487,804	-	3,487,804

*Headcount (RE direct staff count as of 9/30/2014 and shared staff YTD billed hours/1880).

SPP RE Metrics Reporting as of September 30, 2014

w/in Target

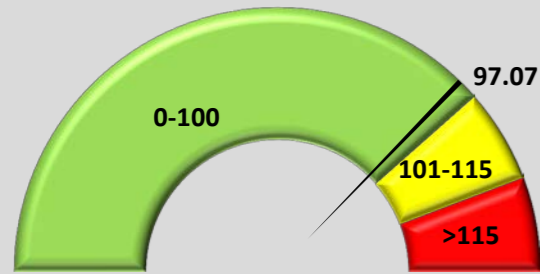
Outside Target but w/in Allotted Range

Outside Allotted Range

1. High Impact

Accept MP or issue NAVAPS at avg. of <= 100 days

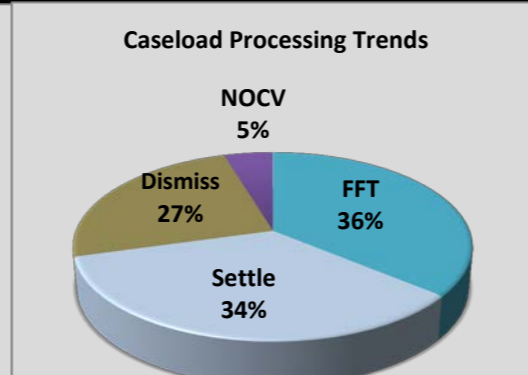
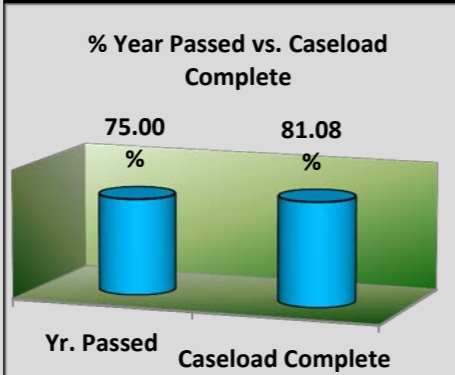
Current Avg. Days : **97.07**



2. Maintain Caseload

Maintain a one year caseload

FFT	Settle	Dismiss	NOCV	Total:	Yr. Passed	75.00%
54	52	37	7	150	Caseload Complete	81.08%

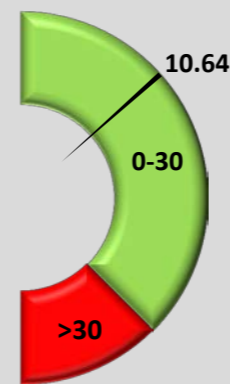


3. Mit. Accept/Reject

Accept/Reject Mit Plans w/in 30 days

Current Avg. Days : **10.64**

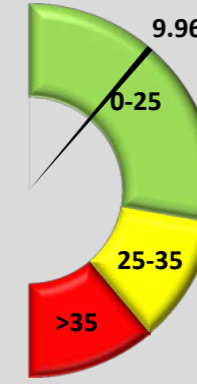
Metric Eligibility : 100.00%



4. Mit. Plan Completion

Complete Mitigation reviews <= 25 days

Current Avg. Days : **9.96**

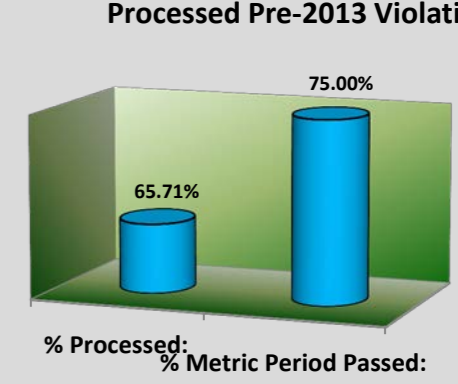


5. Process Pre-2013 Violations

Process 100% of Pre-2013 Caseload

% Processed: **65.71%**

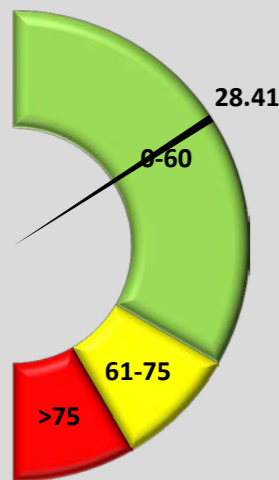
% Metric Period Passed: 75.00%



6. 60 Day Triage

Complete Incoming Compliance Issue Triage in <= 60 days

Current Triage Avg. : **28.41**



7. Records Close Out

Complete Violation Closeout in <= 60 days

of Violations closed out: **157**

100% of Violations closed-out within 60 Days

80%-99% of Violations closed-out within 60 Days

Less than 80% of Violations Closed-out within 60 Days

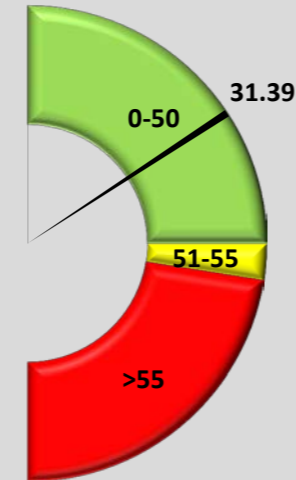
% of Violations Closed-out within 60 Days

82%

8. Publish Off-Site Audit

Publish Off-site w/in 50 days

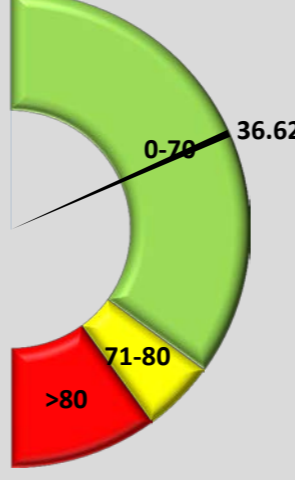
Current Avg. Days : **31.39**



9. Publish On-Site Audit

Publish On-site w/in 70 days

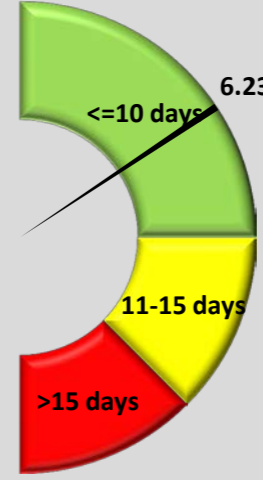
Current Avg. Days : **36.62**



10. BES Request Review

Review requests w/in 10 days and issue determination

Current Avg. Days: **6.23**



11. Publish: Excep., PDS, Self-cert

Publish reports w/in allotted timeframe 100% of time or greater

Current Success Rate: **100%**

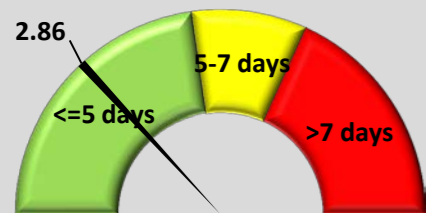
Target: 100%



12. Incoming Processing

Notify NERC of new violations w/in 5 business days

Current Avg. : **2.86**



13. Cost Control

Maintain Costs at or below 2014 projections

Cash Outlays Reported: **30**

Costs at or below

Costs 10% or less above

Costs more than 10% above

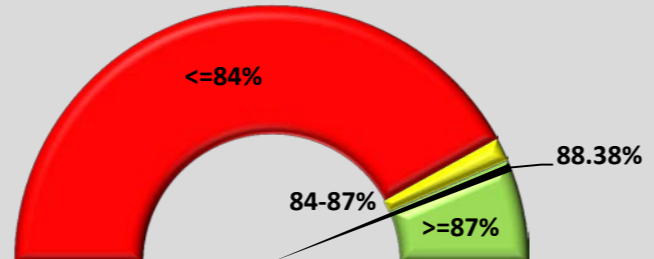
% Above/Below Projected Costs

-47.76%

14. Maintain/Increase Misop Success

87 % success rate or greater over rolling 4 quarter avg.

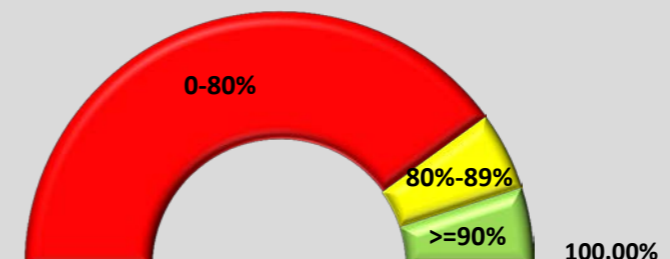
Current Success Rate: **88.38%**



15. Cause Code Success Rate

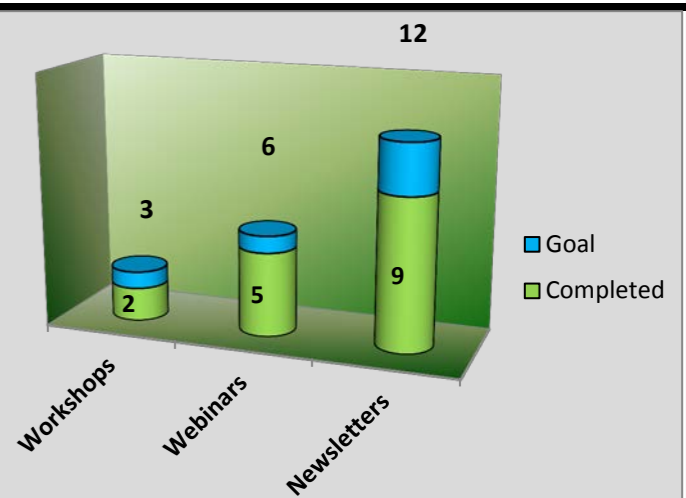
Achieve 90% success rate in Cause Coding Events

Current Success Rate: **100.00%**



16. Outreach

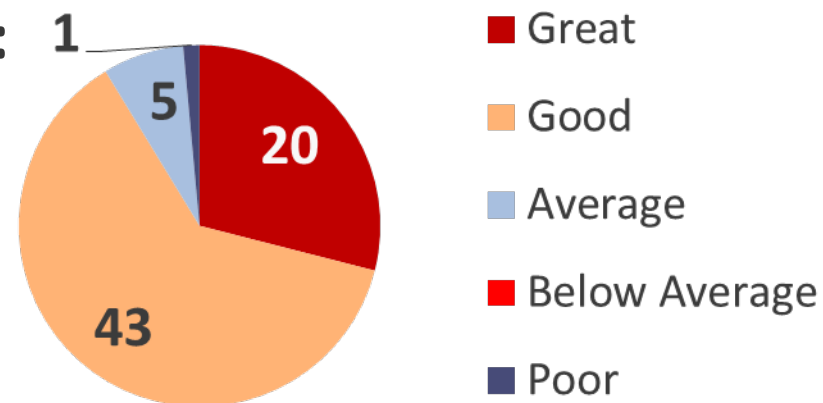
Conduct 3 Workshops, 6 webinars, and 12 newsletters in '14



Outreach

- 190 registrants for 9/4 CIP Transition webinar
- 160 registrants for 10/3 Winter Reliability Assessment webinar
- 216 registrants (in-person/webinar) for Fall Workshop

- Very positive feedback: 1



- 2015 Workshops:

- March 10-11, Spring 2015 Workshop, Little Rock [Register](#)
- June 2-3, CIP 2015 Workshop, Kansas City [Register](#)
- Sept. 29-30, Fall 2015 Workshop, Dallas [Register](#)

The Integration of Variable Generation Task Force (IVGTF)

IVGTF has completed twelve separate reports over the last four years that identify necessary changes regarding how the electrical interconnection is ultimately planned and operated to integrate large amounts of variable generation (i.e. largely renewable generation such as wind and solar) both on the distribution and transmission systems. The IVGTF reported numerous recommendations which were previously approved by the PC. NERC staff ultimately asked the PC to reapprove the recommendations by approving a single final recommendation report. Because many of these recommendations were dated and recommended modifications to standards requirements that are no longer applicable, the PC did not approve the report. Rather the PC asked NERC staff to review the dated recommendations and ultimately document those recommendations that are no longer valid.

Long-Term Reliability Assessment (LTRA)

Three key findings in the initial results of the Long-Term Reliability Assessment (LTRA) were presented.

1. Reserve margins projections are declining and projected to be below the reference margin level within the next five years for MISO (two years), New York (three years), and ERCOT (four years).
2. The myriad of environmental regulations, including the EPA proposed clean power plan (111d), are creating significant uncertainty for system planners and will require further assessment.
3. The rapidly changing resource mix highlights the need to develop new approaches to assess reliability. Increasing dependence on natural gas and growth in renewables are challenging traditional reliability measures, such as planning reserve margins. Actual and projected power plant retirements since 2011 are 83 GW.

Two other findings highlighted in the LTRA include increased uncertainties around load forecasting and system behavior due to changes in load composition. The traditional correlation between economic activity and load growth seems to be changing, as load levels have not increased at expected levels during the economic recovery. Furthermore, the types of loads are changing, making it difficult to predict and model. For example, LEDs and CFLs have replaced traditional resistive loads, such as the incandescent light bulb. NERC plans to release the final LTRA by October 30.

Clean Power Plan – 111d

NERC staff presented a plan to study the reliability impacts of EPA's proposed CO2 Section 111(d) regulations (also known as the Clean Power Plan). The plan includes three phases. The first phase includes a qualitative analysis of potential reliability impact of the rule and will be reported in the LTRA. The second phase involves completing a special reliability assessment to evaluate generation and transmission adequacy prior to the June 2015 final ruling. The last phase assesses reliability impacts promulgated following the June 2015 ruling but before the state

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implementation plans are due in June 2016. Because of the uncertainty of the final rule and state implementation plans, NERC is soliciting industry input in what the analyses should entail.

2014/2015 Winter Reliability Assessment

The 2014/2015 winter reliability assessment projects that all assessment areas are expected to have adequate resources above their reference margins. While fuel inventories, including natural gas storage and coal stockpiles, are below their historical norms, the deficits are continuing to narrow and inventories are expected to be satisfactory by winter. The winter assessment considered similar conditions to the 2014 polar vortex conditions in which natural gas generation accounted for 41% of the total generation during the winter peak. NERC plans to release the final report by November 13.

Geomagnetic Disturbance

The chair of the Geomagnetic Disturbance (GMD) Standards Drafting Team (SDT) provided an update on their progress.

- Standard EOP-010-1 requires RCs, BAs and TOPs to develop operating procedures to respond to GMDs. The Commission approved the standard in June for enforcement in April 2015.
- The SDT drafted TPL-007-1 which NERC posted for comment through October 10, 2014. NERC must file the standard with FERC by January 2015. TPL-007-1 will compel PCs and TPs to conduct a GMD vulnerability assessment on their portion of the BES to withstand a 100-year GMD event. It also requires GOs and TOs to conduct a thermal assessment of transformers with a high-side wye-grounded transformers connected 200 kV or above. It only applies to transformers that the PC or TP identifies with a peak geomagnetic induced current greater than 15 amps per phase. The drafting team expanded the implementation plan from 48 months to 60 months, further clarified that load shedding can be used to meet performance requirements, and increased the time for performing the thermal assessments of the transformers from 12 months to 24 months. There have been significant concerns expressed within industry about the availability of thermal models for transformers. The GMD Task Force is developing a thermal modeling guideline to address this concern.

Physical Security Standard, CIP-014-1

NERC staff provided an update on the physical security standard, CIP-014-1. NERC is gathering a team of planning experts to develop guidance related to the initial and subsequent risk assessments required per R1 and the associated unaffiliated third party verification of the risk assessments per R2. NERC plans to present this guidance at the spring 2015 PC meeting.

System Protection and Controls Subcommittee

The chair of the System Protection and Controls Subcommittee (SPCS) provided an update on the review of the data submitted in response to the single points of failure in protection systems

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NERC Alert. The alert required recipients to perform extensive studies of protection systems and to identify through evaluation of the protection systems and associated planning studies that result in contingencies with unacceptable performances. Based on the data review, the SPCS recommends a revision to the TPL standards to include protective relays and DC control circuitry as contingencies. The SPCS also recommends NERC should place additional emphasis on the assessment of extreme events involving three-phase faults and protection system failures, should develop reliability guidelines regarding the modeling of protection system failures, and should issue a NERC Alert to raise awareness based on the findings.

Spare Equipment Database Task Force

The PC added the Spare Equipment Database Task Force as a permanent working group called the Spare Equipment Working Group. The scope of this working group will be expanded to share best practices regarding spare equipment. Spare equipment is becoming increasingly important to regulators and the federal government. A senior White House advisor shared, with senior industry leadership, their Administration's concern regarding the impact of spare equipment on the resiliency of the electric grid.

Essential Reliability Services Task Force (ERSTF)

The Essential Reliability Services Task Force (ERSTF) released a concept report on Essential Reliability Services (ERS) that characterize Bulk Power System (BPS) reliability. The concept paper identified three fundamental reliability "building blocks" that must be provided by resources to maintain a reliable BPS and is intended to be used as a reference to educate and inform regulators and policy makers on essential reliability "building blocks" as they make decisions to increase the amounts of variable generation (i.e. renewable). The concept paper calls for the ERSTF to "develop an approach and framework for the long-term assessment of essential reliability services to supplement existing resource adequacy assessments. The approach should include a series of metrics that can be continually measured for further evaluation."

AC Substation Equipment Task Force

AC Substation Equipment Task Force provided an update on its recent activities. This task force was formed to analyze AC substation equipment failures, which have been a significant contributor to disturbance events. A report is being developed to summarize various trends in disturbance events resulting from AC substation equipment failure, identification of root and contributing causes, and recommendations for actions. The task force will present the final report to the PC and OC for approval in December.

Functional Model Working Group Demand Response Advisory Team (FMDRAT)

The PC reviewed a report by the Functional Model Working Group Demand Response Advisory Team (FMDRAT). The report assessed the need to include Demand Response (DR) functions and associated functional entities either in the NERC Functional Model or in certain NERC standards. The report concluded that DR should not be included in the Functional Model because reliability standards cannot enforce DR compliance with commercial agreements or obligations.

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The report recommended that the OC, PC, and CIPC continue to monitor DR technology for impacts on BES reliability.

**NERC Compliance and Certification Committee (CCC)
Report to Southwest Power Pool Regional Entity Trustees
Submitted by Jennifer Flandermeyer, SPP RRO Representative
Senior Manager, Reliability Strategy, Kansas City Power & Light
October 20, 2014**

NERC CCC Meeting

- The NERC CCC held its quarterly meeting in Vancouver, BC, Canada on September 17-18, 2014. The materials for this meeting can be found:
 - Agenda:http://www.nerc.com/comm/CCC/Agenda%20Highlights%20and%20Minutes%202013/CCC%20Agenda%20Package_September2014.pdf.
 - Minutes and Presentations: Not yet posted. Will be located here:
<http://www.nerc.com/comm/CCC/Pages/AgendasHighlightsandMinutes.aspx>.

Administrative

- Compliance and Certification Committee (CCC) Roster Update* and meeting minute approvals from June 2014 meeting.

Committee Business

- Ms. Patti Metro, Chair, referenced included agenda package materials with reports from the NERC BOT and MRC meetings.
- Update was provided on Enterprise Wide Risk Committee (EWRC) Activities.
- Reliability Issues Steering Committee (RISC) Update – Mr. Bilke provided an overview of the RISC committee. A presentation was provided to the Committee on the RISC metrics project focused on approaches to use compliance data to reduce reliability risk. Terry Bilke provided information on the work performed on the metric project where the NERC RISC asked for input on managing risk and reliability in the compliance area. Terry went through the work performed and the suggested metrics approach to better align compliance and reliability as well as next steps of the project (See Handout). At this point, no action is needed by the CCC. WWW will coordinate with NERC on next steps and determine further work on the project with defined deliverables.
- 2015 Work Plan review and Committee approval discussion for submission to NERC BOT in November. There were additions to the plan for the RAI Advisory Group (RAIAG) and other Board requested projects. NERC leadership views the RAIAG as a temporary role to drive the RAI program to completion and move the RAI initiative to closure and to operational state. The CCC has a valuable role in a longer term fashion to facilitate feedback to NERC management on implementation challenges or opportunities.
- The CCC annual stakeholder survey will not be consolidated with the NERC annual survey in November. It includes all the CCC survey questions used in prior survey years, as well as additional NERC questions for consistency in statistical analysis. Regional-specific questions will be incorporated in 2015 to reduce duplicative surveys. Mr. Hobson, as Chair of the ERO Monitoring Subcommittee, is working with a NERC advisory group on the NERC Annual Survey, and that group has developed a composite survey that uses the CCC's Stakeholder Perception Survey. NERC and the CCC will use TalentQuest as the survey mechanism.

Subcommittee Updates

Nominating Subcommittee

- To date, all voting positions are filled. Three non-voting positions remain for the two Canadian representatives and one government position.
- Refer to agenda package presentation for details regarding the six CCC members with terms expiring in Feb 2015.
- Also, the representatives for the ReliabilityFirst and WECC positions will need to be filled.

ERO Monitoring Subcommittee (EROMS)

- All 2014 workplan items for EROMS are completed. Report consisted of changes to the Stakeholder perception survey referenced above.

Compliance Processes and Procedures Subcommittee (CPPS)

- 2015 Work Plan review
 - CPPS went through the draft 2015 work plan and how CPPS can contribute to NERC's work plans for internal assessment, EWRC, other RAI activities.
- CCCPP-010 Revisions
 - CPPS went through the draft procedure and criteria during the meeting. CPPS is continuing to revise the draft procedures and will continue to coordinate with NERC staff in order to provide at the CCC December meeting, with a goal for Board approval in February 2015.

Organization and Certification Subcommittee (ORCS)

- Risk-Based Registration (RBR) Advisory Group Update
 - ORCS has continued working with the RBR advisory group (RBRAG) and providing comments on the full RBR documents and proposed Rules of Procedures. ORCS will circulate information in October to the CCC on RBRAG activities.
- Resolution of Multi-registered Regional Entity (MRRE) action item
 - Project is closed for CCC involvement. Stan Kopman summarized the MRRE activities. Stan provided the proposed process for identifying possible MRREs and how the Regional Entities would work with the registered entities to design an optional process for participation in the MRRE process. In October, the ERO Executive Management Committee will review and approve the listing of possible MRRE participants and lead Regions to move forward with participation in the process. The goal is to rollout the process in 2015.

CCC Ongoing Projects

- Team 4- Data Retention (Identify Reasonable Record Retention and Sampling)* – Terry Bilke
 - An overview of Data Retention project results and recommendations was provided to the Committee (See Handout). Terry Bilke stated that he spoke with the CPPS about the recommendations in the report. CPPS will coordinate with NERC on how NERC is considering the recommendations.
 - Project results identified 5 recommendations. Resolution of three bulleted items (3, 4, and 5) has been passed onto NERC and the Manual Task Force to incorporate the recommendations into development of the Compliance Audit Manual. Remaining bullets (1 and 2) will be distributed to NERC personnel for further consideration.
 - The task force is now retired after passing the information onto the CPPS and the Data Retention Project is closed.

NERC Staff Reports

- Reliability Assurance Initiative (RAI) Update
 - Charlie Berardesco opened RAI discussion and discussed the goal of compliance enforcement. The goal is to take a risk based approach to compliance assurance. But ultimately, even with RAI, compliance is the responsibility of the registered entities.
- Risk-based Compliance Oversight Framework
 - Dan Skaar made opening remarks to his presentation and the fact that RAI is a recalibration on regulatory practices and how the ERO performs CMEP oversight. Dan Skaar discussed the transformation of existing compliance monitoring and enforcement activities to be risk-informed and provided some details on current activities.
 - Dan then provided the overview of the Risk-based Compliance Oversight Framework (Framework).
- 2015 ERO CMEP Implementation Plan
 - Adina Mineo provided details on the 2015 CMEP Implementation Plan, which includes information on the ERO’s Risk-based Compliance Monitoring Framework (“Framework”) (see Handout).
- CCC Member Participation in Reviews of RAI document
 - Risk Elements – Helen Nalley
 - Internal Controls Evaluation (ICE) – Matt Goldberg
 - Inherent Risk Assessment (IRA) – Rick Terrill
- RSAW Update on CCC Input – Adina Mineo
 - Adina Mineo reported that NERC staff has updated all RSAWs related to Paragraph 81 requirement references. In June 2014, NERC updated the RSAWs to add language for the retired Requirement from Paragraph 81, as well as removed data fields and boxes to help eliminate confusion of which Requirements remain in effect.
- BES Definition and Implementation of BESNet – Bob Cummings
 - Bob Cummings provided an overview of the BES definition and implementation of BESNet (See Handout). Bob covered both the inclusions and exclusions from the BES definition and how the definition is applied. Bob also covered the process for any exception requests, as well as the use of BESNET and the use of the centralized system.
- Risk Based Registration Update – Rebecca Michael (call-in)
 - Rebecca Michael and Earl Shockley provided an update on the RBR Initiative. Proposed amendments to the NERC Rules of Procedure to implement RBR are posted for a 45 day comment period that ends on October 10. A technical report in support of the proposed amendments also is posted. As a result of ongoing studies, the technical report will be updated to reflect additional information that is being developed and reviewed. The package for NERC Board approval will be posted on October 28 in advance of the November 2014 Board meeting. If approved by the NERC Board, NERC will submit a filing to FERC and other applicable governmental entities shortly after the Board meeting.

Scheduled CCC meetings as follows

- December 3-4, 2014: Phoenix, AZ (APS host location)
- March 3-4, 2015 at NERC Corporate Headquarters in Atlanta, GA
- June 10-11, 2015 at NRECA Conference Center in Arlington, VA
- September 16-17 or 21-22,2015 at TBD
- December 3-4, 2015 at NERC Corporate Headquarters in Atlanta, GA

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Review of PRC Standards under Development

PRC-001 and PRC-027, System Protection Coordination: NERC is looking at alternatives to present to FERC for how to best address the scope of systems included in the verification of coordination (i.e. neighboring utilities only or also within a company's transmission system).

PRC-002-2, Disturbance Monitoring: The drafting team is addressing comments from the second posting with a goal of board approval in November. Industry concerns included 1) equipment – the industry does not seem to yet understand that the standard will be for monitoring necessary rather than the equipment needed 2) overlapping requirements – where multiple entities tie together the intent of the standard is not to require multiple monitoring of the same element. Related requirements have been revised to better explain.

PRC-004-3, Protection System Misoperations: Out for final ballot.

PRC-005-3, Protection System Maintenance and Testing: FERC re-issued a NOPR proposing a few minor suggestions.

PRC standard revisions to address dispersed power producing resources: Looking at how standards should address wind farms and other power producing resources.

Definition of Special Protection System: RAS (Remedial Action System) will be used rather than SPS (Special Protection System). The definition is from the SPCS white paper with a few minor "cosmetic" changes. This standard will be reposted with a goal of board approval in November.

Unit Auxiliary Transformer Protection

PRC-025-1 includes load-responsive relays on the high-side terminals of the unit aux. NERC asked if there was a gap since the standard does not include relays installed on the low-voltage side of the transformer. The drafting team did simulations and looked at GADs data to determine there was not a problem; however, it was felt this was not conclusive. Further tracking of outages within the GADs was considered too granular.

PC has assigned the SPCS to produce a guideline for setting the low side relays of a UAT. This guideline will help to determine if additions are needed in PRC-025. This guideline may include considerations for setting low side UAT relays, response to increased load that will be present during depressed voltage conditions, and a comparison of setting practices to reliability risks. Plans are to also engage the North American Generation Forum.

The PRC-025 drafting team included 150% of the nameplate for the high side of the UAT which is consistent with the PRC-023 standard. There is an alternate method in PRC-025 to set the relay other than 150% by measuring the current and using 150% of that value (at maximum generator MW capability – measure UAT current when the generator is fully loaded). Note generator low side relays are generally set low enough to protect the motors and could be in conflict with these values if carried over to low side relays.

The concern to be addressed is the possibility of a reliability risk by not including protective relays on the low side of the UAT in PRC-025. (Is it possible that ... If the system voltage drops low across a wide part of the system, the current increases due to motor load inside the plants, and UAT overload relays

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are set too low resulting in tripping UAT's ... multiple generators could be shut down.)

SPCS teams assigned to research and bring back to group:

- General description of the systems on the low side of the UAT.
- General description of coordination involved starting from individual loads and stacking up through the UAT low side and high side relays.
- Discussion of the current expected during a voltage depression on the transmission system.

PRC-026-1; Protection System Response to Power Swings

The SPCS discussed the standard development with the Protection System Response to Power Swings standard drafting team. The main industry concerns were related to the SPCS report that indicated a standard may not be necessary. FERC however, has indicated that a standard is necessary. The drafting team is following the SPCS provided approach.

The existing draft has been modified to require evaluation of only future operations that happen during a power swing (after the date of the standard). Although the standard is for preventing tripping on stable swings; reference to unstable power swings are still in the draft because they could be an indicator that less severe conditions would possibly result in tripping of a stable swing at that location. If meeting the standard to be secure for stable swings compromises the dependability for tripping on faults there is a process to notify the PC and not necessarily correct.

Attachment "A" references relays that would trip with a time delay less than 15 cycles only (typical ZII tripping would not be included). Stable power swings are expected to be in the relay zones for a time less than 15 cycles.

If this standard is approved without modifications, the PC would be required to identify elements for evaluation including substations terminating at a stations associated with a generator. The GO/TO would then have 12 months to evaluate if conditions exists that could result in tripping on a stable swings per attachment "B". There may be tools available to aid in this evaluation from industry. For those evaluated that could trip on stable swings the GO/TO would then have 60 days to develop a corrective action plan (CAP) to be implemented as stated in the CAP.

Order No. 754 Data Request

SPCS has reviewed the data for 200kV and above. Data for the 100kV to 200kV buses is not yet due. The preliminary conclusion is that the data supports further action should be considered due to the reliability risk.

If a standard development is deemed appropriate, the issue may be best addressed within the TPL-004 standard. There should be consideration to the relative risk of component types. SPCS discussion was to possibly add only those components to the TPL standard that produce a higher risk to the reliability. For example having two separate VT secondary windings may not be as critical as relays, aux relays or DC circuitry. The data is not indicating that redundant protection systems are necessary for

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all BES elements.

The preliminary summary was reported to the PC in June. SPCS is now developing a draft report for presentation at the September PC meeting for buses 200kV and above. SPCS will then evaluate data for 100-199kV during Q4 with final report at the December PC meeting. The report summarizes data results and relates it to the reliability risk for failure of the different component types.

Future Meetings

October 21-23 – San Francisco (8-5 Tue, Wed; 8-12 Thu)

February 3-5 – Juno Beach

Additional Input on Order No. 758 for Project 2007-17

SPCS sudden pressure relay report – evaluated all IEEE devices and concluded that only sudden pressure relays should be added to PRC-005. This recommendation has been followed by the drafting team for PRC-005. There have been questions regarding if other devices should also be added. SPCS researched these devices further to respond to these questions. Of particular question was generator vibration monitors and mechanical condition monitors (device number 39). Also of concern was the breaker arc extinguishing systems (low SF6 trip). The follow up SPCS report is planned to be issued this fall.

Power Plant and Transmission System Protection Coordination

[Present report for approval at September or December 2014 PC meeting]

Comments from public posting have been compiled. There were several comments regarding reference to NERC standards. Most comments were editorial in nature rather than technical.

Protection System Misoperations

PRC004-3 drafting team removed the requirement to fill out the misoperation template with the intent there would be a Section 1600 data request requiring this reporting. PRC-004-3 was posted last summer. The standard is now approved and will be going to the board in August which is when the data request is also desired to go to the board. A revised data request has been posted. Flow of information will be for the misoperation data to come to NERC through a Web application. The regions will be able to view all data entered for their region. Currently the CAP is not submitted to NERC, but will with the new process

The revised template from the SPCS to provide additional granularity will also need to be rolled out to the regions. Since the approved Section 1600 data request will likely be finalized in mid 2016, it is preferred to roll out the template changes for Q12015 reporting.

**NERC Interchange Subcommittee
SPP RE Trustees Update
October 2014
Submitted by: Jason Smith, SPP**

Report:

The NERC Interchange Subcommittee has been dormant since 2012. NERC has concluded project 2008-12 in December 2013 which consisted of an effort by the Coordinate Interchange Standards Drafting Team to update several INT Standards. Those revised standards went into effect on 10/1/2014.

The revised INT Standards that went into effect 10/1/2014 are:

**INT-004-3
INT-006-4
INT-009-2
INT-010-2
INT-011-1**

The NERC Board of Trustees approved the above Standards on February 6, 2014. FERC issued an order approving these INT Standards on June 30, 2014 with an implementation date of 10/1/2014.

At this time, there are no planned meetings of the Interchange Subcommittee.

NERC Operating Committee

Report to the SPP Regional Entity Trustee

October 27, 2014

Jim Useldinger, Kansas City Power & Light

Activity Update

A regular meeting of the NERC Operating Committee (OC) was held on September 16-17, 2014 in Vancouver, BC, Canada.

OC meeting highlights:

- **NERC Board of Trustees Chair Frederick Gorbet** was in attendance and provided opening remarks to the OC on the current state on NERC in the industry.
- OC Vice-Chair Jim Case briefed the OC on recent **Reliability Issues Steering Committee (RISC)** activity related to current risk profiles (e.g., changing resource mix and regulatory uncertainty). The OC suggested adding human performance and entity registration to this list of risk profiles. The OC also suggested the list of risk profiles be presented in severity of risk level.
- Essential Reliability Services Task Force (ERSTF) presented its technical reference document **“Concept Paper on Essential Reliability Services that Characterize Bulk Power System Reliability.”** The paper’s intended purpose is to educate and inform industry, regulators and the public about essential reliability services. The TF has categorized Essential Reliability Services into three focus areas: 1) Load and Resource Balance, 2) Voltage Support and 3) Frequency Support. The TF is to develop an approach and framework for the long-term assessment of essential reliability services to supplement existing resource adequacy assessments. The TF approach is to then develop a series of metrics that can be continually measured for further evaluation. The OC made several suggestions for improvement as the TF redrafts the concept paper.
- The **2014 Polar Vortex Weather Phenomenon Status Report** was presented to review the data contained in the report. The following observations and recommendations were summarized:
 - The Polar Vortex was an extreme event that tested resiliency
 - Gas availability challenges highlighted in forced outage rates
 - Sustain industry winter weather preparedness
 - Share lessons learned in both operations and maintenanceThe report was published on September 30, 2014 and NERC hosted a webinar to discuss findings of the report.
- **GridEx III** planning has begun, GEWG is encouraging the involvement of reliability coordinators in the planning process. The GEWG would like GridEx III to be more RC centric in that planning details and exercise injects are transmitted to the RC for tailoring and distribution to entities in their footprint.

- Dr. Emmanuel Taylor, Dept of Energy, reviewed DOE’s goals and objectives of its Research and Development program regarding operating reliability. **DOE’s Energy Infrastructure Modeling and Analysis (EIMA) Division** drives electric grid modernization by improving energy system reliability, security and resiliency. The EIMA Division is currently sponsoring two research and development programs related to transmission reliability and advanced grid modeling. Two projects (Frequency Response Tool and Data Integrity/Situational Awareness) are focused on event identification. Pursuit of these projects may enable system operators to identify subtle system changes before they become unmanageable in real-time.

- Balancing Authority Reliability-based Controls standard drafting team (BARC SDT) provided an overview of the **“Balancing Authority ACE Limit (BAAL) Preliminary Field Trial Report.”** The preliminary report is intended to inform the OC of the status of the BAAL field trial and to discuss observations and conclusions determined this far. The SDT recommended continuation of the field trial until BAL-001-2 becomes effective.

- **Subcommittee Reports**
 - Operating Reliability Subcommittee (ORS)
 - Real-Time Tools Degradation Reliability Guideline – draft guideline being developed discussing reliability impacts due to loss of RT Tools
 - NERC staff implemented a project to replace the NERC RC hotline with newer technology, which will provide greater flexibility in conducting hotline calls. Potential future use of the hotline for NOAA GMD notifications.
 - Resources Subcommittee (RS)
 - RS reviewed OC concerns with the “Generating Unit Operations during Complete Loss of Communications Reliability Guideline” and believes these concerns should be addressed in the training document that the guideline encourages all BAs, TOPs and GOs to prepare.
 - Event Analysis Subcommittee (EAS)
 - EAS Lessons Learned Summary published in June, 2014 (4 LL) and August, 2014 (2LL) was reviewed. Go to www.nerc.com > “Program Areas & Departments” tab > “Reliability Risk Management” (left side menu) > “Event Analysis” (left side menu) > “Lessons Learned” (left side menu)
 - Personnel Subcommittee (PS)
 - CEH process under review
 - Continuing Education manual in process of being updated

Next Meeting

The next meeting of the Operating Committee will be on December 9-10, 2014 in Atlanta, Georgia.